VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a MINOR, MUNICIPAL permit. The effluent limitations contained in this permit will maintain the water quality standards of 9 VAC 25-260-00 et seq.

1. **PERMIT NO.:** VA0063843

EXISTING PERMIT EXPIRATION DATE: September 20, 2009

2. **FACILITY NAME AND LOCAL MAILING ADDRESS**

Town of Gretna Sewage Treatment Plant
P.O. Box 602
Gretna, Virginia 24557

FACILITY PHYSICAL LOCATION (IF DIFFERENT)

940 Millstream Drive
Pittsylvania County

FACILITY CONTACT:
NAME: Gary Shields
TITLE: Operator
PHONE: (434) 656-6572

3. **OWNER CONTACT:** (TO RECEIVE PERMIT)
NAME: David Lilly
TITLE: Town Manager
ADDRESS: P.O. Box 602
Gretna, VA 24557
PHONE: (434) 656-6572
E-MAIL: townhall@townofgretna.org

4. **PERMIT DRAFTED BY**: DEQ, Water Permits, South Central Regional Office

Permit Writer: Kirk A. Batsel — Date(s): April 24, 2009, July 24, 2009
Reviewed By: Kip Foster — Date(s):

5. **PERMIT CHARACTERIZATION**: (Check as many as appropriate)

( ) Issuance
(X) Reissuance
( ) Revoke & Reissue
( ) Owner Modification
( ) Board Modification
( ) Change of Ownership/Name
Effective Date:

(X) Municipal
SIC Code(s) 4952
____
( ) Industrial
SIC Code(s) ____
____
____

(X) POTW
( ) PVOTW
( ) Private
( ) Federal
( ) State
( ) Publicly-Owned Industrial

( ) Site-Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio

( ) Interim Limits in Other Document (attach to fact sheet)
( ) Concept Engineering Report Being Approved with Permit
( ) Possible Interstate Effect

6. **APPLICATION COMPLETE DATE:** April 6, 2009 (VDH comments)

7. **RECEIVING WATERS CLASSIFICATION:** River basin information.

Outfall No: 001

Receiving Stream:	George's Creek	7-Day/10-Year Low Flow:	0.65	MGD
River Mile:	9.92	7-Day/10-Year High Flow:	1.46	MGD
Basin:	Roanoke River	1-Day/10-Year Low Flow:	0.47	MGD
Subbasin:	Roanoke River	1-Day/10-Year High Flow:	1.23	MGD
Section:	2	30-Day/5-Year Low Flow:	1.14	MGD
Class:	III	30-Day/10-Year Low Flow:	0.92	MGD
Special Standard(s):	None	Harmonic Mean Flow:	2.7	MGD

8. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

Existing municipal discharge resulting from the discharge of treated domestic sewage.

Currently, the approved pretreatment program is currently classified as "Inactive" as there are now no Significant Industrial Users (SIU) contributing to the treatment works.

9. **LICENSED WASTEWATER OPERATOR REQUIREMENTS:** ( ) No (X) Yes Class: III

10. **RELIABILITY CLASS:** II

11. **SITE INSPECTION DATE:** April 24, 2009 **REPORT DATE:** June 10, 2009

Performed By: Kirk A. Batsel, Permit Engineer BRRO-L

SEE ATTACHMENT 1

12. **DISCHARGE(S) LOCATION DESCRIPTION:** Provide **USGS Topo** which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: GRETNA **Quadrant No.:** 047A

SEE ATTACHMENT 2

13. **ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, ALSO PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.**

Narrative: The current 0.230 MGD facility consists of influent flow monitoring, basket strainer, pretreatment lagoon (divided into two cells, used in series, classified as an aerated facultative lagoon), polishing pond*, chlorination (and chlorine contact), terraced overland flow distribution system (dechlorination), collection/metering tank w/ v-notch weir, cascade step aeration (post aeration), and final discgarge to Georges Creek. *Although originally designed as a cold weather storage lagoon, the polishing pond it is currently utilized as a normal part of the treatment system. This polishing pond provides for significant storage and equalization. The level of the polishing pond is lowered prior to winter to allow for additional storage capacity.

The previous reissuance incorporated an expansion from 0.23 MGD to 0.35 MGD. However, the plant has not undergone expansion at this time.

SEE ATTACHMENT 3

14. **DISCHARGE DESCRIPTION:** Describe each discharge originating from this facility.

SEE ATTACHMENT 4

15. **COMBINED TOTAL FLOW:**

TOTAL: 0.35 MGD (for public notice)

PROCESS FLOW:	MGD (IND.)
NONPROCESS FLOW:	MGD (IND.)
DESIGN FLOW:	0.35 MGD (MUN.)

16. **STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS:** (Check all which are appropriate)

- X State Water Control Law
- X Clean Water Act
- X VPDES Permit Regulation (9 VAC 25-31-10 et seq.)
- X EPA NPDES Regulation (Federal Register)
- ___ EPA Effluent Guidelines [40 CFR 400 – 471 (industrial)]
- X EPA Effluent Guidelines [40 CFR 133 (municipal 2^0 treatment)]
- X Water Quality Standards (9 VAC 25-260-00 et seq.)
- X Waste load Allocation from a TMDL or River Basin Plan

17. **LIMITATIONS/MONITORING:** Include **all effluent limitations and monitoring requirements** being placed in the permit for each outfall, including any WET limits. If applicable, include any limitations and monitoring requirements being included for sludge and ground water.

There are no applicable limitations and monitoring requirements for sludge. While a SMP (sludge application) was submitted, sludge is not really generated by the design of this STP. Furthermore, sludge disposal is not anticipated to be needed during the current 5-year permit term.

There **are** applicable limitations and monitoring requirements for ground water.

SEE ATTACHMENT 5

18. **SPECIAL CONDITIONS:** Provide **all actual permit special conditions**, including compliance schedules, toxic monitoring, sludge, ground water, storm water and pretreatment.

SEE ATTACHMENT 6

19. **EFFLUENT/SLUDGE/GROUND WATER LIMITATIONS/MONITORING RATIONALE:** For outfalls, attach any analyses completed (**MIX.EXE and WLA.EXE) and STATS printouts** for individual toxic parameters. As a minimum, it will include: waste load allocation (acute, chronic and human health); statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); input data listing; and, effluent limitations determination. Include **all calculations** used for each outfall's set of effluent limits and incorporate the results of **any water quality model(s)**. Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for **limited internal waste streams** and indicator pollutants. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:

WAIVERS/VARIANCES/ALTERNATE LIMITATIONS: Provide justification or refutation rationale for requested **waivers to the permit application (e.g., testing requirements)** or variances/alternatives to required permit conditions/ limitations. This includes, but is not limited to: variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

The applicant submitted a written waiver request for the Temperature parameter in section A12 of EPA Form 2A. Based on an evaluation of available data and permitting needs, this application testing waiver was approved

SUITABLE DATA: What, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed.

ANTIDEGRADATION REVIEW: Provide all appropriate information/calculations for the antidegradation review.

Tier I: __X__ **Tier II:** _____ **Tier III:** _____

The State Water Control Board's Water Quality Standards regulations include an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier I, existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier II water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier II waters is not allowed without an evaluation of the economic and social impacts. Tier III water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters. The limitations in this permit were developed in accordance with section 303(d)(4) of the Clean Water Act. Therefore, antidegradation restrictions do not apply.

The antidegradation review begins with the Tier determination. The facility discharges to Georges' Creek. This receiving stream is not listed on the 303(d) list and no in-stream data are available that indicate the water quality criteria either have been violated or are barely met. However, the permit contains water quality-based limits for Ammonia, TKN and Total Recoverable Copper (full allocation). Therefore, George's Creek, at the point of this facility's discharge, is designated as Tier I and no further review is needed. Permit limits have been established by determining waste load allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These waste load allocations will provide for the protection and maintenance of all existing uses.

ANTIBACKSLIDING REVIEW: Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

There are no backsliding issues to address in this permit (i.e., limits as stringent or more stringent when compared to the previous permit).

SEE ATTACHMENT 7

20. **SPECIAL CONDITIONS RATIONALE:** Provide a rationale **for each of the permit's special conditions**, including compliance schedules, toxic monitoring, sludge, ground water, storm water and pretreatment.

SEE ATTACHMENT 8

21. **SLUDGE DISPOSAL PLAN:** Provide a brief description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

Current SMP indicates that sludge will be disposed of in an approved landfill, however, this plant is not expected to generate sludge (only screenings).

22. **MATERIAL STORED:** List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

Chlorine gas is maintained on-site for effluent disinfection.

23. **RECEIVING WATERS INFORMATION:** Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260 - Part IX) [along with Parts VII and VIII]. Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied. Attach any memoranda or other information which helped to develop permit conditions (i.e. **flow**

determination memo, tier determinations, PReP complaints, special water quality studies, **STORET data** and other biological and/or chemical data, etc.

SEE ATTACHMENT 9

24. **303(d) LISTED SEGMENTS:** Indicate if the facility **discharges directly** to a segment that is listed on the current 303(d) list, if the allocations are specified by an approved TMDL and, if so, provide all appropriate information/calculations. If the facility discharges directly to a stream segment that is on the current 303(d) list, the fact sheet must include a description of how the TMDL requirements are being met.

This facility discharges directly to Georges Creek, a tributary of Whitehorn Creek. While the Georges Creek stream segment receiving the effluent is not listed on the current approved 303(d) list for non-attainment of E. coli, Whitehorn Creek is listed in the watershed TMDL "Bacteria TMDL Development for the Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy creek, and Whitehorn Creek Watersheds". This approved TMDL development document does include an *E. coli* waste load allocations for the Gretna STP. This permit contains *E. coli* limits of 126 N/CML (monthly average expressed as a geometric mean) which is in compliance with the TMDL. Additionally, a TMDL reopener is included in the VPDES permit in the event the permit needs to be revised to address a TMDL issue.

SEE ATTACHMENT 10

25. **CHANGES TO PERMIT:** Use **TABLE A** to record any **changes from the previous permit** and the rationale for those changes. Use **TABLE B** to record any **changes made to the permit during the permit processing period** and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

SEE ATTACHMENT 11

26. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET:**

N/A - This is a municipal facility.

27. **EPA/VIRGINIA DRAFT PERMIT SUBMISSION CHECKLIST:**

SEE ATTACHMENT 12

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from DEQ planning.

The discharge is in conformance with the existing planning documents for the area.

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THE FOLLOWING SECTION [PUBLIC PARTICIPATION (No. 29)] WILL BE COMPLETED AFTER PUBLIC NOTICE.
==========

29. **PUBLIC PARTICIPATION:** Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

VDH COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the Virginia Dept. of Health and noted how resolved.

Based on their review of the application, the VDH had no objections to the draft permit, as stated by letter dated April 2, 2009.

EPA COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

[SELECT THE APPROPRIARE ONE BELOW AND DELETE THE REST]

EPA waived the right to comment and/or object to the adequacy of the draft permit. [USE FOR ALL MINORS]

OR

EPA has no objections to the adequacy of the draft permit.

OR

By letter dated _____, the EPA provided the following comments: (DESCRIBE COMMENTS AND RESOLUTIONS)

ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from an adjacent state and noted how resolved.

[SELECT THE APPROPRIATE ONE BELOW AND DELETE THE REST]

Not Applicable.

OR

The draft permit was sent to _____ [ENTER NAME OF STATE AND DEPT.] and no comments were received OR no objections were received as to the adequacy of the draft permit.

OR

By letter dated _____, the _____ [ENTER NAME OF STATE AND DEPT.] provided the following comments: (DESCRIBE COMMENTS AND RESOLUTIONS)

OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

[SELECT THE APPROPRIATE ONE BELOW AND DELETE THE REST]

Not Applicable.

OR

The draft permit was sent to _____ [ENTER NAME OF AGENCY] and no comments were received OR no objections were received as to the adequacy of the draft permit.

OR

By letter dated _____, the _____ [ENTER NAME OF AGENCY] provided the following comments: (DESCRIBE COMMENTS AND RESOLUTIONS)

OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT: Document any comments received from other sources and note how resolved.

[SELECT THE APPROPRIATE ONE BELOW AND DELETE THE REST]

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

OR

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation. Section 9 VAC 25-31-310 of the VPDES Permit Regulation states, in part, "The Board shall hold a public hearing whenever it finds, on the basis of requests, a significant degree of public interest in a draft permit(s)."

NOTE: DESCRIBE PN COMMENTS AND RESOLUTIONS. PROVIDE PUBLIC HEARING DATE AND REFERENCE BACKGROUND MEMORANDUM, IF APPROPRIATE.

PUBLIC NOTICE INFORMATION: Comment Period: **Start Date:**
End Date:

NOTE: THE 30-DAY COMMENT PERIOD STARTS THE DAY AFTER THE FIRST PUBLIC NOTICE APPEARS IN THE NEWSPAPER AND ENDS 30 DAYS LATER, UNLESS IT FALLS ON A WEEKEND OR HOLIDAY, IN WHICH CASE YOU GO TO THE NEXT BUSINESS DAY.

Persons may comment in writing or by e-mail to the DEQ on the proposed reissuance of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Kirk A. Batsel at: Department of Environmental Quality (DEQ), Blue Ridge Regional Office, 7705 Timberlake Road, Lynchburg, VA 24502. Telephone: 434-582-6204 E-mail: kabatsel@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. **ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:**

The permittee is current with their annual permit maintenance fees.

31. **SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:**

Attachment 1 Site Inspection Report/Memorandum
Attachment 2 Discharge Location/Topographic Map
Attachment 3 Schematic/Plans & Specs/Site Map/Water Balance
Attachment 4 Discharge/Outfall Description
Attachment 5 Limitations/Monitoring
Attachment 6 Special Conditions
Attachment 7 Effluent/Sludge/Ground Water Limitations/Monitoring Rationale/Suitable Data/ Stream Modeling/Antidegradation/Antibacksliding
Attachment 8 Special Conditions Rationale
Attachment ___ Material Stored
Attachment ___ Receiving Waters Info./Tier Determination/STORET Data
Attachment ___ 303(d) Listed Segments
Attachment ___ TABLE A and TABLE B - Change Sheets
Attachment ___ NPDES Industrial Permit Rating Worksheet
Attachment ___ EPA/Virginia Draft Permit Submission Checklist
Attachment ___ Chronology Sheet
Attachment ___

ATTACHMENT 1

SITE INSPECTION REPORT/MEMORANDUM

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTH CENTRAL REGIONAL OFFICE
WATER DIVISION

7705 Timberlake Road Lynchburg, VA 24502

SUBJECT: VPDES PERMIT # VA0063843, REISSUANCE SITE INSPECTION, TOWN OF GRETNA SEWAGE TREATMENT PLANT (STP)

TO: Kip Foster, Water Permit Manager

FROM: Kirk Batsel, Sr. Environmental Engineer – BRRO Lynchburg

DATE: June 10, 2009

COPIES: Permit file

A site inspection was conducted at the subject facility on April 24, 2009. Gary Shields-Plant Operator, David Lilly-Town Manager, and myself were present during the inspection. The inspection focused on the STP plant, by unit process, and included influent screening (basket strainer), pump station, cold weather storage lagoon, pretreatment lagoon (aerated facultative), chlorination, chlorine contact, overland flow terraces, effluent metering tank with V-notch weir, post (step) aeration, final effluent discharge point and receiving stream. Please refer to attached photographs depicting the plant, operations, and current condition on the day of inspection. On this date the facility was not applying wastewater to the terraces or discharging.

During the inspection, it was noted that the air distribution system in the aerated facultative lagoon had been replaced and was operating well. This was identified as a problem during the VPDES reissuance inspection conducted in 2004.

Note the much better air dispersion in the picture (right) taken during the inspection compaired with the picture taken in 2004 (left).

The pictures presented below demonstrate contrast between pictures taken during 2004 (left) and the ones taken during the 2009 inspection (right).

All terraces appeared to be in very good condition during the 2009 inspection, with harvestable stands of hay.

Note the flow measuring weir, where all collected wastewater passes through prior to discharge to step aeration.

Note that a discharge was occurring in 2004 as opposed to no discharge during the 2009 inspection.

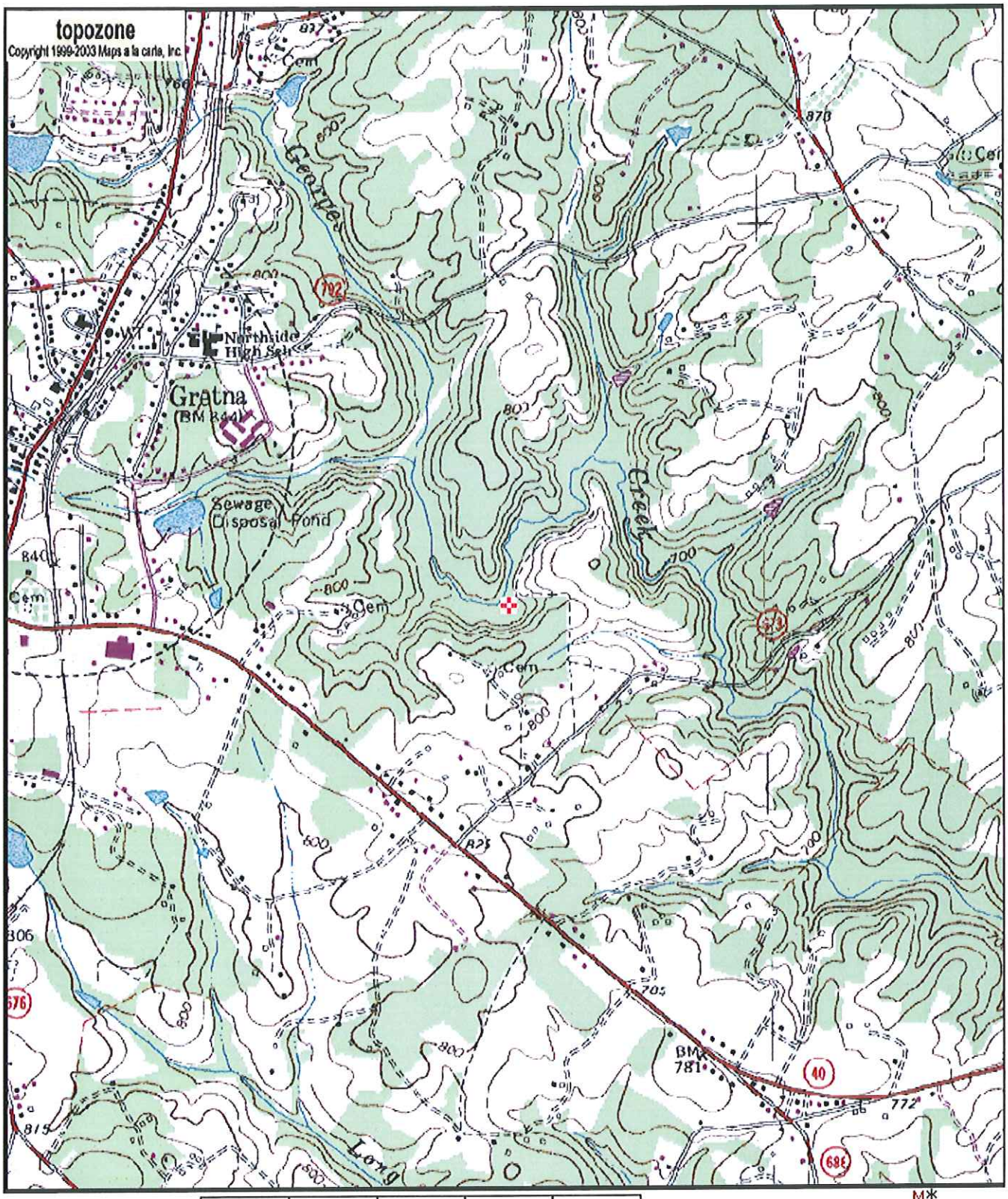
Receiving Stream

The subject facility discharges to George's Creek, a tributary of the Roanoke River.

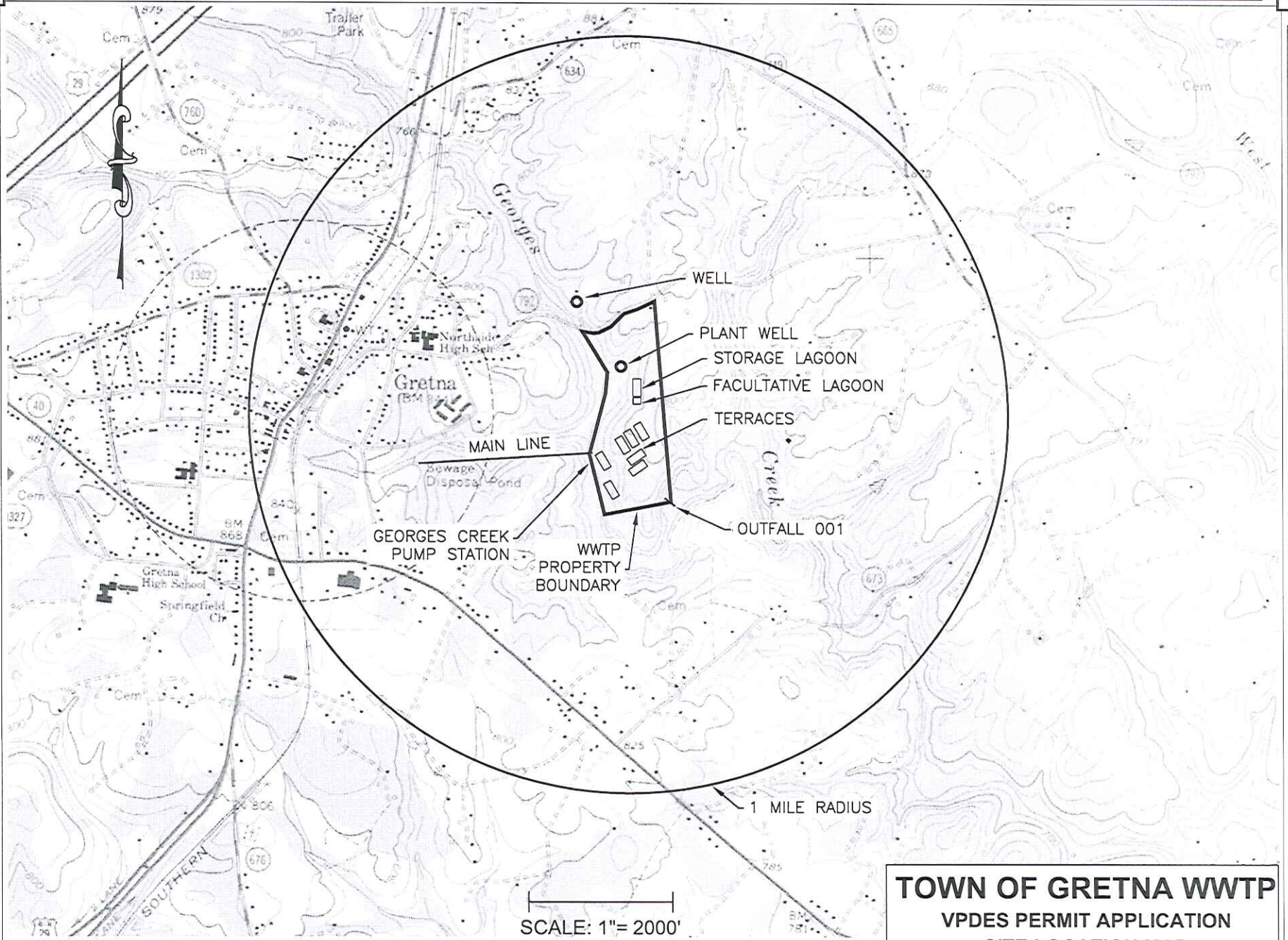
No compliance items were noted during the 2009 site inspection and the plant appears to be in good condition.

ATTACHMENT 2

DISCHARGE LOCATION/TOPOGRAPHIC MAP



Map center is 36° 56' 50"N, 79° 20' 34"W (WGS84/NAD83)
Gretna quadrangle
Projection is UTM Zone 17 NAD83 Datum



TOWN OF GRETNA WWTP

VPDES PERMIT APPLICATION

SITE LOCATION MAP

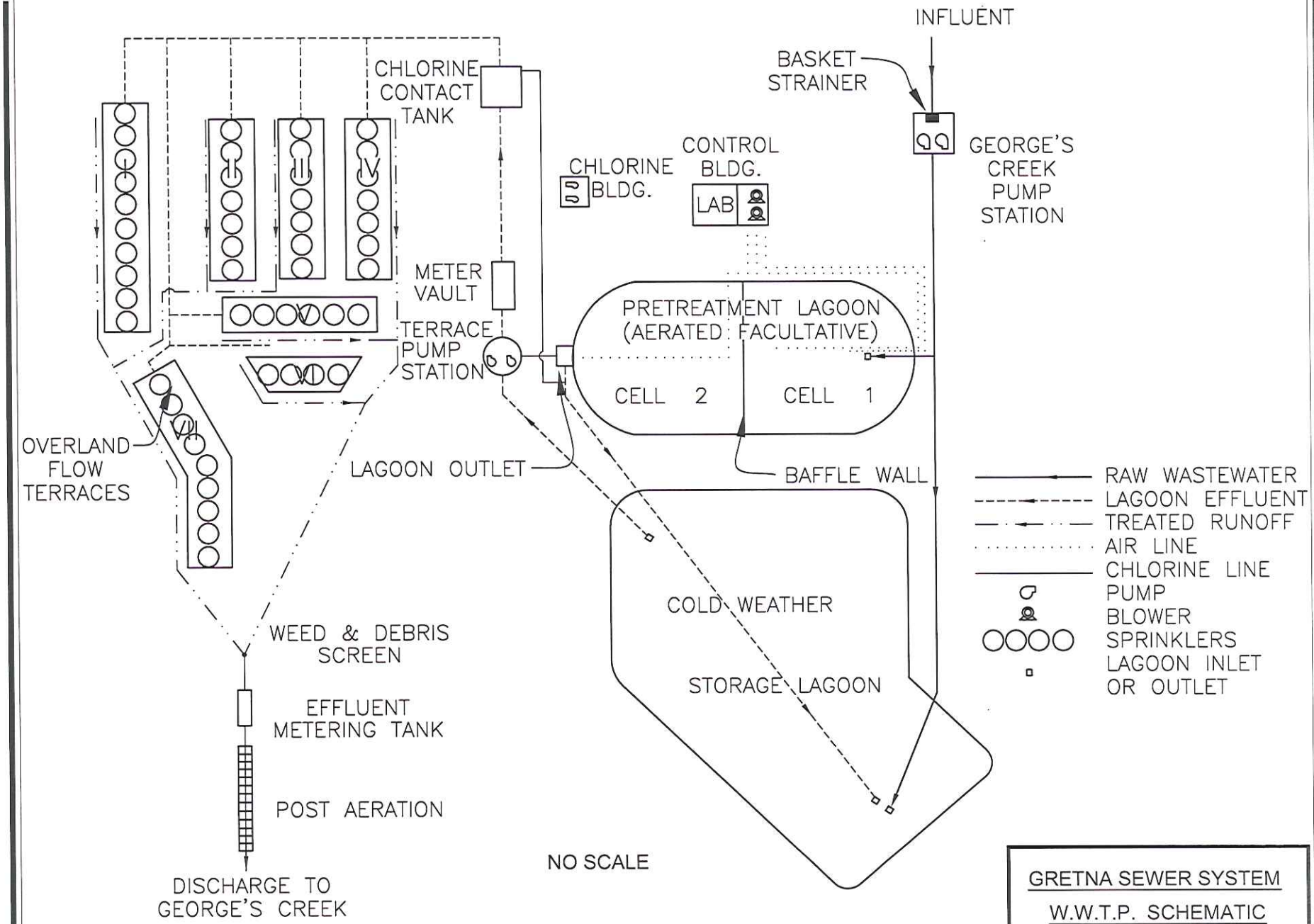
SEWER SLUDGE APPLICATION

Peed & Bortz, L.L.C.

CIVIL & ENVIRONMENTAL ENGINEERS

ATTACHMENT 3

SCHEMATIC/PLANS & SPECS/SITE MAP/ WATER BALANCE



GRETNA SEWER SYSTEM

W.W.T.P. SCHEMATIC

FORM 2A

Reed & Bortz, L.L.C.

CIVIL & ENVIRONMENTAL ENGINEERS

Wastewater Treatment Plant

Patton, Harris, Rust & Associates designed the Gretna wastewater treatment plant in the 1980's. The plant utilizes an overland flow process consisting of an influent strainer, a raw sewage pump station, a facultative, aerated lagoon, a cold weather storage lagoon, pre-chlorination and post chlorination facilities, sprinkler system, seven (7) overland flow terraces, post aeration unit, and laboratory facilities. A plant schematic is presented in Figure 1.

The plant was designed for a flow 230,000 gallons per day (gpd) and influent BOD_5 and Total Suspended Solids (TSS) concentrations of 250 mg/l.

The follow is a brief description of the major plant treatment components:

Influent Basket Strainer

Raw sewage to the Georges Creek Pump Station flows through the removable basket strainer, which is constructed of aluminum bars spaced at 1½". Course solids, rags, and large objects are removed from the basket by manual cleaning.

Georges Creek Pump Station

After screening, the raw wastewater flows into the pump station wet well. The station has two (2) submersible pumps, which can each pump between 640 and 750 gpm depending on the head conditions. A 30 horsepower constant speed motor drives each pump. Plant influent flow is measured using a magnetic flow meter located in a manhole downstream of the Georges Creek Pump Station.

Pre-Treatment Lagoon

Screened wastewater is pumped from the Georges Creek Pump Station to the Pre-Treatment Lagoon, which is classified as an aerated facultative lagoon. This process removes the majority of the BOD_5 by biological treatment as both aerobic and anaerobic reactions. The lagoon has a volume of approximately 3.45 million gallons and provides 15.0 days detention time at 230,000 gpd hydraulic loading. The lagoon has a center baffle wall dividing the unit into two cells. In Cell 1 the influent raw sewage is thoroughly mixed with the aerated lagoon liquid. In Cell 2, less air is supplied to the lagoon liquid and turbulence is completed eliminated near the lagoon outlet structure. This pond was designed to achieve a 60 mg/l BOD_5 effluent concentration under winter temperature conditions (2.8°C). Effluent from the Pre-Treatment Lagoon is typically chlorinated and directed by gravity to the Storage Lagoon.

Piping is provided to allow the lagoon discharge to be diverted directly to the Terrace Pump Station.

Air is furnished to the Pre-Treatment Lagoon by two 25 horsepower compressors located in the Control Building. The air is entrained into the wastewater by a submerged aeration system consisting of a manifold and distribution piping and special diffusers located at the lagoon inlet to mix and disperse raw sewage solids. Aeration orifices are located in the dispersion tubing, which rests on the lagoon bottom. The aeration system is capable of removing 76% of the lagoon influent BOD_5 on a year round basis by providing a minimum of 2 pounds of oxygen per pound of BOD_5 per day.

Storage Lagoon

The Storage Lagoon acts as a cold weather holding basin when seasonal temperatures preclude terrace wastewater application. This lagoon is typically used year round with the volume reduced prior to the winter months to allow cold weather storage. The lagoon has a volume of approximately 10.33 million gallons and provides 45 days cold weather storage.

Terrace Pump Station

The Pre-Treatment Lagoon and the Storage Lagoon effluent is transferred to the Terrace Pump Station by gravity. This pump station discharges to the chlorine contact tank via a 8" force main. The station is equipped with two submersible pumps which can each pump between 800 and 1100 gpm depending on the head conditions. A 15 horsepower constant speed motor drives each pump. Terrace flow is measured using a magnetic flow meter located in the meter vault downstream of the Terrace pumps.

Chlorine Contact Tank

The chlorine contact tank serves as a disinfection tank and storage tank for the terrace distribution system. Treated wastewater from the lagoons enters the tank and is forced to flow around baffle walls to promote mixing and prevent short circuiting. The tank has a volume of 54,000 gallons and provides 60 minutes detention time at a flow rate of 900 gpm prior to discharge to the terrace distribution piping. The chlorine contact tank effluent should have a chlorine residual between 1.0 and 2.0 mg/l.

A gas chlorination system allows the operator to introduce a chlorine solution after the Pre-Treatment Lagoon and/or prior to entering the chlorine contact tank.

Overland Flow Terraces

Overland flow is a land treatment process where wastewater is applied along the top of sloped terraces and allowed to flow across the vegetative surface to runoff collection ditches. The wastewater is treated by physical, chemical, and biological means as it flows in thin film over the sloped ground surface. The overland flow treatment process serves as a secondary treatment component of the Gretna plant. The overland flow terraces were designed to achieve 80% BOD5 removal and have an area of 12.1 acres with a wetted area of 10.77 acres. The terraces are limited to a 4 inches per week application rate during the winter months of December, January, and February and 6 inches per week during the summer. This rate is based on a delivered wastewater flow of 25 gpm per 100 feet of terrace length. The effluent flow from the overland flow terraces is measured in an effluent metering tank with the measured values representing the plant discharge flow.

Post Aeration

Oxygen is entrained in the treat wastewater prior to discharge to Georges Creek. This process consists of a cascade aeration in a concrete outfall ditch. The ditch was formed with a series of steps designed to force the effluent to cascade over them and become oxygen enriched.

Process Description from "Town of Gretna Sewer System Evaluation" Peed & Bortz, LLC, March 10, 2004

ATTACHMENT 4

DISCHARGE/OUTFALL DESCRIPTION

TABLE I

NUMBER AND DESCRIPTION OF OUTFALLS

OUTFALL NO.	DISCHARGE LOCATION	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	George's Creek @ 36°57'4", -79°21'6"	Existing municipal discharge resulting from the discharge of treated domestic sewage.	The current 0.230 MGD facility consists of influent flow monitoring, basket strainer, pretreatment lagoon (divided into two cells, used in series, classified as an aerated facultative lagoon), polishing pond*, chlorination (and chlorine contact), terraced overland flow distribution system (dechlorination), collection/metering tank w/ v-notch weir, cascade step aeration (post aeration), and final discharge to Georges Creek. *Although originally designed as a cold weather storage lagoon, the polishing pond it is currently utilized as a normal part of the treatment system. This polishing pond provides for significant storage and equalization.	Current design 0.23 MGD, Permit allows for expansion to 0.35 MGD

(1) List operations contributing to flow
(2) Give brief description, unit by unit
(3) Give maximum 30-day average flow for industry and design flow for municipal

ATTACHMENT 5

LIMITATIONS/MONITORING

MUNICIPAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 DESIGN FLOW: 0.23 MGD
Outfall Description: Final effluent after post-aeration
SIC CODE: 4952

( ) Final Limits (X) Interim Limits Effective Dates - From: Permit effective date To: Issuance of CTO for 0.35 MGD plant

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
	mg/l*	kg/day*	mg/l*	kg/d*	mg/l*	mg/l*		
Influent Flow (MGD) [a]	NL		NL				Continuous	TIRE
Effluent Flow (MGD)	NL		NL				Continuous	TIRE
BOD5	30	26.1	45	39.2	NA	NA	3 D-Days/Week	8-HC
Total Suspended Solids	30	26.1	45	39.2	NA	NA	3 D-Days/Week	8-HC
Ammonia	13.7	NA	13.7	NA	NA	NA	1/Month	8-HC
Total Residual Chlorine (µg/l) [b][c]	28.7	NA	35.4	NA	NA	NA	1/D-Day	Grab
E. coli (N/CML-geometric mean)	126		NA		NA	NA	1/Week	Grab
Dissolved Oxygen	NA		NA		5.0	NA	1/D-Day	Grab
pH (standard units)	NA		NA		6.0	9.0	1/D-Day	Grab
Total Recoverable Copper (µg/l) [d]	17	NA	17	NA	NA	NA	1/Month	8-HC

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY

TIRE = TOTALIZING, INDICATING AND RECORDING EQUIPMENT

[a] See Part I.D.6. for additional flow requirements.
[b] See Part I.B for additional chlorine monitoring instructions.
[c] See Parts I.D.7.a. and I.D.7.b. for quantification levels and reporting requirements, respectively.
[d] See Part I.C. for schedule of compliance and monitoring requirements.

The design flow of this treatment facility is 0.23 MGD.
At least 85% removal for BOD5 and TSS must be attained for this effluent.
There shall be no discharge of floating solids or visible foam in other than trace amounts.

BASES FOR LIMITATIONS:

PARAMETER	MULTIPLIER OR PRODUCTION	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow	Design flow (0.23 MGD)			X
pH	NA	X		
BOD5 (mg/l)	Secondary Treatment Standards (monthly avg.) 1.5 x monthly avg. (weekly max.)	X		
BOD5 (kg/day)	Design flow (0.23 MGD)	X		
TSS (mg/l)	30/45	X		
TSS (kg/day)	Design flow (0.23 MGD)	X		
Ammonia, Total Residual Chlorine, Dissolved Oxygen, T. Rec. Copper, *E. coli*	NA		X	

MUNICIPAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 DESIGN FLOW: 0.35 MGD
Outfall Description: Final effluent after post-aeration
SIC CODE: 4952

(X) Final Limits ( ) Interim Limits Effective Dates - From: Issuance of CTO for 0.35 MGD plant To: Permit expiration date

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
	mg/l*	kg/day*	mg/l*	kg/d*	mg/l*	mg/l*		
Influent Flow (MGD) [a]	NL		NL				Continuous	TIRE
Effluent Flow (MGD)	NL		NL				Continuous	TIRE
cBOD5	20	26.5	30	39.7	NA	NA	3 D-Days/Week	8-HC
Total Suspended Solids	30	39.7	45	59.6	NA	NA	3 D-Days/Week	8-HC
Ammonia	10.3	NA	10.3	NA	NA	NA	1/Month	8-HC
Total Residual Chlorine (ug/l) [b] [c]	22.3	NA	27.5	NA	NA	NA	1/D-Day	Grab
E. coli (N/CML-geometric mean)	126		NA		NA	NA	1/Week	Grab
Dissolved Oxygen	NA		NA		6.0	NA	1/D-Day	Grab
pH (standard units)	NA		NA		6.0	9.0	1/D-Day	Grab
Total Kjeldahl Nitrogen	16	21.2	24	31.8	NA	NA	1/ 2 weeks	8-HC
Total Recoverable Copper (ug/l) [c]	14	NA	14	NA	NA	NA	1/Month	8-HC

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY

TIRE = TOTALIZING, INDICATING AND RECORDING EQUIPMENT

[a] See Part I.D.6. for additional flow requirements.
[b] See Part I.B for additional chlorine monitoring instructions.
[c] See Parts I.D.7.a. and I.D.7.b. for quantification levels and reporting requirements, respectively.

The design flow of this treatment facility is 0.35 MGD.
At least 85% removal for BOD5 and TSS must be attained for this effluent.
There shall be no discharge of floating solids or visible foam in other than trace amounts.

BASES FOR LIMITATIONS:

PARAMETER	MULTIPLIER OR PRODUCTION	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow	Design flow (0.35 MGD)			X
pH	NA	X		
cBOD5, TKN (mg/l)	Water quality model (monthly avg.) 1.5 x monthly avg. (weekly max.)		X	
cBOD5 (kg/day)	Design flow (0.35 MGD)		X	
TSS (mg/l)	30/45	X		
TSS (kg/day)	Design flow (0.35 MGD)	X		
Ammonia, Total Residual Chlorine, Dissolved Oxygen	NA		X	
Total Recoverable Copper (ug/l), *E. coli*	NA		X	

GROUND WATER LIMITATIONS/MONITORING

GW WELL # 1, 2, 3, 4, and 5
Site Description: Gretna STP
SIC CODE: 4952

(X) Final Limits ( ) Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

PARAMETER	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			FREQUENCY	SAMPLE TYPE
Static Water Level	NL	0.01 FT	1/Year	Measured
pH (standard units)	NL	SU	1/Year	Grab
Specific Conductance	NL	M-M/CM	1/Year	Grab
Nitrate Nitrogen (NO_3)	NL	mg/l	1/Year	Grab
Total Organic Carbon (TOC)	NL	mg/l	1/Year	Grab
Chlorides	NL	mg/l	1/Year	Grab
Ammonia Nitrogen	NL	mg/l	1/Year	Grab

NL = NO LIMIT, MONITORING REQUIREMENT ONLY

1/Year = Between January 1 and December 31, due January 10 of following year.

Grab samples - An individual sample should be taken after three (3) well volumes of groundwater are removed (allowing the well to recharge between each well volume removed) or until well purging parameters (i.e. pH, temperature, and specific conductance) stabilize to $\pm$ 10%. The bailer or hose used should not contaminate samples.

The bases for the limitations/monitoring are noted in Attachment 7 of this fact sheet.

ATTACHMENT 6

SPECIAL CONDITIONS

B. ADDITIONAL TOTAL RESIDUAL CHLORINE (TRC) LIMITATIONS AND MONITORING REQUIREMENTS

1. a. The permittee shall monitor the TRC at the outlet of the chlorine contact tank, prior to terrace distribution, three (3) times per day at 4-hour intervals by grab sample.

b. No more than 9 of all samples taken after the chlorine contact tank, prior to terrace distribution, shall be less than 1.5 mg/l for any one calendar month.

c. No TRC sample collected after the chlorine contact tank, prior to terrace distribution, shall be less than 0.6 mg/l.

2. If an alternative to chlorination as a disinfection method is chosen, *E. coli* shall be limited and monitored by the permittee as specified below:

	Discharge Limitations Monthly Average	Monitoring Requirements Frequency	Sample Type
E. coli (n/100 ml)	126*	1 Day/week	Grab (Between 10 AM & 4 PM)

The above requirements, if applicable, shall substitute for the TRC requirements delineated in Parts I.A. and I.B.1 above.

* Geometric Mean

C. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the final limitations and monitoring requirements for Total Recoverable Copper as specified in Part I.A. of this permit in accordance with the following schedule:

1.	Submit Proposed Plan for Achievement of Compliance or Select a Design Engineer	**No later than December 19, 2009**
2.	Submit Progress Reports to the DEQ Regional Office	**Quarterly after #1, with the first report due April 10, 2010.**
3.	Achieve Compliance with Part I.A. Limitations	**No later than October 1, 2013.**

Quarterly = In accordance with the following schedule: 1st quarter (January 1 - March 31, **due April 10**); 2nd quarter (April 1 - June 30, **due July 10**); 3rd quarter (July 1 - September 30, **due October 10**); 4th quarter (October 1 - December 31, **due January 10**).

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to the DEQ Regional Office, either a **report of progress** or, in the case of specific actions being required by identified dates, a written **notice of compliance or noncompliance**. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

D. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1. Permit Reopeners

a. Sludge Reopener

This permit may be modified or, alternatively, revoked and reissued if any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the Clean Water Act is more stringent than any requirements for sludge use or disposal in this permit, or controls a pollutant or practice not limited in this permit.

b. Total Maximum Daily Load (TMDL) Reopener

This permit shall be modified or, alternatively, revoked and reissued if any approved waste load allocation procedure, pursuant to section 303(d) of the Clean Water Act, imposes waste load allocations, limits or conditions on the facility that are not consistent with the requirements of this permit.

2. Licensed Wastewater Operator Requirement

The permittee shall employ or contract at least one Class III licensed wastewater works operator for the facility. The license shall be issued in accordance with Title 54.1 of the Code of Virginia and the regulations of the Board for Waterworks and Wastewater Works Operators. The permittee shall notify the DEQ Regional Office, in writing, whenever he is not complying, or has grounds for anticipating he will not comply with this requirement. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

3. Reliability Class Requirement

The permitted treatment works shall meet Reliability Class II.

4. Certificate to Construct (CTC) and Certificate to Operate (CTO) Requirements

The permittee shall, in accordance with the Sewage Collection and Treatment Regulations, obtain a CTC and a CTO from the DEQ prior to constructing wastewater treatment facilities and operating the facilities, respectively.

5. Operations and Maintenance (O & M) Manual

The permittee shall review the existing O & M Manual and notify the DEQ Regional Office, in writing, that it is still accurate and complete. If the O & M Manual is no longer accurate and complete, a revised O & M Manual shall be submitted for approval to the DEQ Regional Office. The permittee will maintain an accurate, approved O & M Manual for the treatment works. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

a. Treatment works design, operation, routine preventative maintenance of units within the treatment system, critical spare parts inventory and record keeping;
b. Techniques to be employed in the collection, preservation and analysis of effluent samples;
c. Procedures for handling, storing, and disposing of all wastes, fluids, and pollutants characterized in Part I.C.8. (Materials Handling and Storage) that will prevent these materials from reaching state waters.

Any changes in the practices and procedures followed by the permittee shall be documented and submitted for approval, as noted above, within 90 days of the effective date of the changes. Upon approval of the submitted manual changes, the revised manual becomes an enforceable part of this permit. Noncompliance with the O & M Manual shall be deemed a violation of the permit.

Letter/Revised Manual Due: No later than January 10, 2010.

6. 95% Design Capacity Notification

A written notice and a **plan of action** for ensuring continued compliance with the terms of this permit shall be submitted to the DEQ Regional Office when the monthly average flow influent to the sewage treatment plant reaches 95 percent of the design capacity authorized in this permit for each month of any three consecutive month period. The written notice shall be submitted within 30 days and the plan of action shall be received at the DEQ Regional Office **no later than 90 days from the third consecutive month for which the flow reached 95 percent of the design capacity.** The plan shall include the necessary steps and a prompt schedule of implementation for controlling any current or reasonably anticipated problem resulting from high influent flows. Failure to submit an adequate plan in a timely manner shall be deemed a violation of this permit.

7. Compliance Reporting Under Part I.A. and I.B.

a. Quantification Levels

(1) The quantification levels (QL) shall be as follows:

Effluent Characteristic	Quantification Level
Chlorine	100 µg/l
Ammonia	0.2 mg/l
Copper	7.0 µg/l

(2) The permittee may use any approved method which has a QL equal to or lower than the QL listed in a.(1) above. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method.

(3) It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained.

(4) An appropriate analytic method for metals shall be selected from the following list of EPA methods, or any approved method in 40 CFR Part 136, which will achieve a QL that is less than or equal to the QL specified in a.(1) above.

Metal	Analytical Methods
Copper	220.1; 200.7; 220.2; 200.9; 1638; 1640; 200.8

b. Reporting

(1) **Monthly Average** -- Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in a.(1) above shall be determined as follows: All concentration data below the specified QL listed in a.(1) above shall be treated as zeros. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, for the month. This arithmetic average shall be reported on the DMR as calculated. If all data are below the QL, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the calculated concentration is <QL, then report "<QL" for the quantity; otherwise, use the calculated concentration to calculate the quantity.

(2) **Daily maximum** -- Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in a.(1) above shall be determined as follows: All concentration data below the specified QL listed in a.(1) above shall be treated as zeros. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average of the values shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data for each daily maximum are below the QL, then the average shall be reported as <[QL]. If reporting for quantity is required on the DMR and the calculated concentration for each daily average is <QL, then report "<QL" for the quantity; otherwise, use the calculated maximum value of the daily averages to calculate the quantity.

(3) Any single datum required shall be reported as "<QL" if it is less than the QL listed in a.(1) above. Otherwise, the numerical value shall be reported.

8. Materials Handling and Storage

Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes and/or other wastes to State waters, except as expressly authorized.

9. Ground Water Monitoring Plan

The permittee shall revise the existing Ground Water Monitoring Plan in order to bring it into conformance with the requirements of this permit. The revised plan shall be submitted for approval to the DEQ Regional Office. The purpose of this plan will be to determine if the system integrity is being maintained and to indicate if activities at the site are resulting in violations of the Board's Ground Water Standards. The approved revised plan shall become an enforceable part of this permit. Any changes to the plan must be submitted for approval to the DEQ Regional Office.

If monitoring results indicate that any unit has contaminated the ground water, the permittee shall submit a corrective action plan within 60 days of being notified by the regional office. The plan shall set forth the steps to be taken by the permittee to ensure that the contamination source is eliminated or that the contaminant plume is contained on the permittee's property. In addition, based on the extent of contamination, a risk analysis may be required. Once approved, this plan and/or analysis shall become an enforceable part of this permit.

Revised Ground Water Monitoring Plan Due: No later than January 10, 2010.

10. Indirect Dischargers

The permittee shall provide adequate notice to the DEQ Regional Office of the following:

a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Section 301 or 306 of Clean Water Act and the State Water Control Law if it were directly discharging those pollutants; and

b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of this permit.

Adequate notice shall include information on (i) the quality and quantity of effluent introduced into the treatment works, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the treatment works.

11. Sludge Management Plan

The permittee shall conduct all sewage sludge use or disposal activities in accordance with the Sludge Management Plan (SMP) approved with the issuance of this permit. Any **proposed changes** in the sewage sludge use or disposal practices or procedures followed by the permittee shall be documented and **submitted for Department of Environmental Quality and Department of Health approval 90 days prior to the effective date of the changes**. Upon approval, the revised SMP becomes an enforceable part of the permit. The permit may be modified or, alternatively, revoked and reissued to incorporate limitations or conditions necessitated by substantive changes in sewage sludge use or disposal practices.

12. Minimum Freeboard

The permittee shall ensure that all basins or lagoons maintain a minimum freeboard of one (1) foot at all times. Should the one-foot freeboard not be maintained, the permittee shall immediately notify the DEQ Regional Office, describing the problem and corrective measures taken to correct the problem. Within 5 days of the notification, the permittee shall submit a written statement of explanation and corrective measures taken.

13. Terrace Hydraulic Loading

Except as approved by the Department of Environmental Quality, no terrace shall receive hydraulic loadings (to include precipitation) in excess of 4 inches per week during the winter and 6 inches per week during the summer. Accurate records of hydraulic loading to each terrace shall be maintained and submitted each month with the DMR.

14. Annual Terrace Report

An annual summary report shall be submitted to the DEQ by February 10th of each year on the condition of the terraces and agronomic practices that occurred during the preceding year, including number of crop cuttings, estimated total crop yield (tons/acre) removed from the site, lime and fertilizer requirements, reseeding required, and a summary statement concerning groundwater quality.

15. Facility Closure Plan

If the permittee does not intend to apply for reissuance of this permit or if any part of the facility presently permitted will not be included in a future permit application, an **approvable closure plan** shall be submitted to the DEQ regional office **90 days before the facility is taken out of service**. The closure plan shall include a plan of action and a schedule.

16. Permit Application Requirement

In accordance with Part II. M. of this permit, a new and complete permit application shall be submitted for the reissuance of this permit.

Application Due: No later than 03/24/2014.

E. PRETREATMENT

1. The permittee's pretreatment program has been approved. The program is an enforceable part of this permit. The permittee shall:

   a. Submit to the DEQ Regional Office a survey of all Industrial Users discharging to the POTW. The information shall be submitted to the POTW on the DEQ's Discharger Survey Form or an equivalent form that includes the quantity and quality of the wastewater. Survey results shall include the identification of significant industrial users of the POTW.

      Survey Due: No later than April 10, 2010.

      In lieu of the survey, the permittee may elect to develop, submit for approval and implement the plan to continuously survey the industrial community in their jurisdiction.

2. Upon determination of receiving process wastewater from a Significant Industrial User* to this treatment works, the permittee shall:

   a. Notify the DEQ, in writing within five (5) days;

   b. Implement the approved pretreatment program that complies with the Clean Water Act, Water Control Law and State regulations;

   c. Submit to the DEQ Regional Office, an annual report that describes the permittee's program activities over the previous year. The annual report shall be submitted no later than January 31 of each year and shall include:

      (1) An updated list of the Significant Industrial Users* showing the categorical standards and local limits applicable to each.

      (2) A summary of the compliance status of each Significant Industrial User with pretreatment standards and permit requirements.

      (3) A summary of the number and types of Significant Industrial User sampling and inspections performed by the POTW.

      (4) All information concerning any interference, upset, VPDES permit or Water Quality Standards violations directly attributable to Significant Industrial Users and enforcement actions taken to alleviate said events.

      (5) A description of all enforcement actions taken against Significant Industrial Users over the previous 12 months.

      (6) A summary of any changes to the submitted pretreatment program that have not been previously reported to the DEQ Regional Office.

      (7) A summary of the permits issued to Significant Industrial Users since the last annual report.

      (8) POTW and self-monitoring results for Significant Industrial Users determined to be in significant non-compliance during the reporting period.

      (9) Results of the POTW's influent/effluent/sludge sampling, not previously submitted to DEQ.

(10) Copies of newspaper publications of all Significant Industrial Users in significant non-compliance during the reporting period. This is due no later than March 31 of each year.

(11) Signature of an authorized representative.

d. Submit any changes to the approved pretreatment program to the DEQ Regional Office and obtain approval before implementation of the changes.

e. Ensure all Significant Industrial User's permits are issued and reissued in a timely manner and that the Significant Industrial User permits issued or reissued by the POTW are effective and enforceable.

f. Inspect and sample all Significant Industrial Users at a minimum of once a year.

(1) Sampling shall include all regulated parameters, and shall be representative of the wastewater discharged.

(2) Inspection of the Significant Industrial Users shall cover all areas which could result in wastewater discharge to the treatment works including manufacturing, chemical storage, pretreatment facilities, spill prevention and control procedures, hazardous waste generation and Significant Industrial User's self-monitoring and records.

g. Implement the reporting requirements of Part VII of the VPDES Permit Regulation.

h. Review the Enforcement Response Plan (ERP) and ensure it meets state and federal regulatory requirements. The approved ERP is an enforceable part of this permit and shall be implemented.

i. Develop local limits or reevaluate local limits using current influent, effluent and sludge monitoring data and submit the data and results of the evaluation to the DEQ Regional Office within one year of the effective or modification date. All Significant Industrial Users shall be sampled at the end of any categorical process and at the entrance to the treatment works.

j. Ensure that adequate resources are available to implement the approved program.

k. Meet all public participation requirements and annually public notice Significant Industrial Users in significant non-compliance with pretreatment standards and requirements for the previous 12 months.

3. The DEQ may require the POTW to institute changes to its pretreatment program:

a. If the approved program is not implemented in a way satisfying the requirements of the Clean Water Act, Water Control Law or State regulations;

b. If problems such as pass-through, interference, water quality standards violations or sludge contamination develop or continue; and

c. If federal, state or local requirements change.

* A <u>significant industrial user</u> is one that:
- Has a process wastewater (**) flow of 25,000 gallons or more per average workday;
- Contributes a process wastestream which makes up 5-percent or more of the average dry weather hydraulic or organic capacity of the POTW;
- Is subject to the categorical pretreatment standards; or
- Has significant impact, either singularly or in combination with other Significant Dischargers, on the treatment works or the quality of its effluent.

** Excludes sanitary, non-contact cooling water and boiler blowdown.

ATTACHMENT 7

EFFLUENT/SLUDGE/GROUND WATER LIMITATIONS/MONITORING RATIONALE/SUITABLE DATA/STREAM MODELING/ ANTIDEGRADATION/ANTIBACKSLIDING

THE EFFLUENT LIMITATIONS AND MONITORING RATIONALE ARE BASED ON THE FOLLOWING:

FLOW – The design of the facility is 0.23 million gallons per day (MGD) with a proposed expansion to 0.35 MGD. Both influent and effluent flow is monitored in order to provide information on quantities being received at the plant and utilized by the overland flow system (infiltration/evaporation/transpiration). The effluent flow is intermittent (approximately 8 hours per discharge day for 5 days per week). Both influent and effluent flow is monitored continuously by totalizing, indicating and recording equipment (in MGD); this applies to the expanded facility also. This monitoring frequency and sample type is in accordance with guidance for this size facility and should be appropriate for assessment of treatment plant capacity.

pH – The limits of 6.0 to 9.0 for both the existing and expanded facility are based on secondary treatment limits. This is an intermittent discharge to a relatively small stream. The discharge makes up about 26% of the 1Q10 flow at a design flow of 0.23 MGD and 35% at a design flow of 0.35 MGD. These limits will ensure compliance with water quality standards. The monitoring frequency is once per discharge-day. The sample type is grab (required for pH). This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits.

BOD5 and CBOD5 – EXISTING FACILITY - The BOD5 limits of 30 mg/l (26.1 kg/day) monthly average and 45 mg/l (39.2 kg/day) weekly average are based on secondary treatment limits and are applicable up to the point of issuance of the Certificate-to-Operate for the expanded facility. These limits, which comply with the water quality management plan waste load allocation of 100 lbs/day for this facility, are being carried forward with this reissuance and will ensure compliance with water quality standards. The monitoring frequency is three discharge-days per week. The sample type is 8-hour composite. This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits.

EXPANDED FACILITY - The cBOD5 limits of 20 mg/l (26.5 kg/day) monthly average and 30 mg/l (39.7 kg/day) weekly average are based on a water quality model and are applicable during the period beginning with issuance of the Certificate-to-Operate for the expanded facility until permit expiration. The limits comply with the water quality management plan waste load allocation of 100 lbs/day for this facility (equivalent to approximately 70.1 lbs/day BOD5) and are protective of water quality. The monitoring frequency is three discharge-days per week. The sample type is 8-hour composite. This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits.

TSS - The limits for the existing facility are 30 mg/l (26.1 kg/day) monthly average and 45 mg/l (39.2 kg/day) weekly average and are being carried forward with this reissuance. The limits for the expanded facility are 30 mg/l (39.7 kg/day) monthly average and 45 mg/l (59.6 kg/day) weekly average. Both sets of limits are based on secondary treatment. The monitoring frequency is three discharge-days per week. The sample type is 8-hour composite. This monitoring frequency and sample type should be appropriate for assessment of compliance with the effluent limits.

TRC - The total residual chlorine limits of 28.7 µg/l (monthly average) and 35.4 µg/l (weekly average), for the 0.23 MGD design flow plant are being carried forward with this reissuance. The total residual chlorine limits of 22.3 µg/l (monthly average) and 27.5 µg/l (weekly average), for the expanded 0.35 MGD design flow plant, are also being carried forward and are based on the current acute water quality criterion (intermittent discharge). Both sets of limits ensure compliance with water quality standards. The effluent monitoring frequency is once per discharge day and the sample type is grab (required for chlorine). This monitoring frequency should provide enough data for proper assessment of compliance with the effluent limits.

All internal monitoring for chlorine, after the chlorine contact tank, is to ensure adequate disinfection.

E. coli - **0.23 MGD Flow Tier**

The limit of 126 N/CML (monthly average expressed as a geometric mean) is based on water quality. This limit is based on the Waste Load Allocation (WLA) set forth in the "Bacteria TMDL development for the Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek Watersheds". This TMDL was approved by EPA on November 4, 2007. The WLA was based on an *E. coli* concentration of 126 CFU. In order to remain in compliance with the approved TMDL, and the Water Quality Standards (9 VAC 25-260-170 B.) this limitation has been added. The limit conforms to the TMDL and ensures that proper disinfection is taking place. The monitoring frequency is once per week. The sample type is grab (based on design flow). This monitoring frequency and sample type are in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limit and water quality standards.

0.35 MGD Flow Tier

The limit of 126 N/CML (monthly average expressed as a geometric mean) is protective of water quality. A derivation of the limit with a margin for expansion, expressed as an annual mass loading (5.67×10^{12} cfu/year), is contained in the Cherrystone Creek Segment, Waste Load Allocation, portion of the approved Banister River Watershed TMDL. The monitoring frequency is set at once per week and the sample type is grab. This monitoring frequency and sample type are in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limits.

TKN - The Total Kjeldahl Nitrogen limits of 16 mg/l (21.2 kg/d) monthly average and 24 mg/l (31.8 kg/l) weekly average for the expanded plant are water-quality based limits. These limits were derived by the water-quality model performed based on the expansion request. The limits will ensure compliance with water quality standards. The monitoring frequency is once per 2 weeks. The sample type is 8-hour composite. This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits.

Ammonia- The limits of 13.7 µg/l (monthly average and weekly average) for the existing 0.23 MGD plant and 10.3 µg/l (monthly average and weekly average) for the proposed 0.35 design flow expansion are water-quality based limits. The need for an ammonia limit was reassessed using a default value of 9 mg/l in the analysis, which demonstrated that the above limits are protective. The limits will ensure compliance with the VA water quality standards. The monitoring frequency is once per month. The sample type is 8-hour composite. This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limit.

Dissolved Oxygen - The dissolved oxygen (DO) limits of 5.0 mg/l for current design flow of 0.23 MGD and 6.0 mg/l for the expanded 0.35 MGD design facility are water quality based and will ensure protection of water quality standards. These levels of dissolved oxygen are necessary in order to allow the BOD5 and cBOD5 limits noted for both the existing and expanded facilities. An evaluation DO data, indicate that the expanded plant should not have a compliance problem with the higher limit utilizing the existing cascade step aeration discharge system. The monitoring frequency is once per discharge day and the sample type is grab. This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limit.

Copper - The Total Recoverable Copper Limits of 17 ug/l (monthly average and weekly average) for the exiting 0.23 MGD plant are new with this reissuance. Date previously generated were re-evaluated based on the change in the Virginia Copper Water Quality Standard. This evaluation indicated the need for this limitation. Since this is a new limit, a four year schedule of compliance has been added as a special condition.

The Total Recoverable Copper Limits of 14 ug/l (monthly average and weekly average) for proposed 0.35 MGD plant have been revised based on a re-evaluation, are based on the acute criterion, and insure compliance with the water quality standards. This limitation becomes effective with the issuance of the CTO for the expanded plant.

The monitoring frequency is 1/month and the sample type 8 HC (based on flow). This monitoring frequency and sample type is in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limit.

Reduced Monitoring

The subject facility has received a number of WLs during the current permit term. Therefore, reduced monitoring in not applicable at this time.

THE GROUND WATER MONITORING RATIONALE IS BASED ON THE FOLLOWING:

Ground Water Monitoring Well Nos. 1, 2, 3, 4 and 5

Static Water Level - Needed to assess the ground water elevation at the time of well sampling and helps to verify ground water flow direction. The monitoring frequency is measured once per year, which is based on a reduction from quarterly that occurred with the last reissuance. This monitoring frequency and sample type is in accordance with guidance and should be appropriate for assessment of ground water quality and facility operations, including the overland flow system.

pH – The monitoring frequency is once per year by grab sample, which is based on a reduction from quarterly that occurred with the last reissuance. This monitoring frequency and sample type is in accordance with guidance and should be appropriate for assessment of ground water quality and facility operations, including the overland flow system.

Specific Conductance - This test provides an indication of dissolved solids. Dissolved solids (e.g., chlorides) are mobile in the ground water and this test is used as another check. The monitoring frequency is once per year by grab sample, which is based on a reduction from quarterly that occurred with the last reissuance. This monitoring frequency and sample type is in accordance with guidance and should be appropriate for assessment of ground water quality and facility operations, including the overland flow system.

Ammonia-Nitrogen, Chlorides, Nitrate-Nitrogen - These parameters are characteristic of domestic sewage and are mobile in the ground water (good indicator parameters). The monitoring frequency is once per year by grab sample, which is based on a reduction from quarterly that occurred with the last reissuance. This monitoring frequency and sample type is in accordance with guidance and should be appropriate for assessment of ground water quality and facility operations, including the overland flow system.

TOC - This parameter is used, in part, to verify well integrity. The monitoring frequency is once per year by grab sample, which is based on a reduction from quarterly that occurred with the last reissuance. This monitoring frequency and sample type is in accordance with guidance and should be appropriate for assessment of ground water quality and facility operations, including the overland flow system.

All groundwater parameters (see attached data summary) required by the current and previous permits may be found in Attachment 7.

Mixing Zone Predictions for Gretna STP

Effluent Flow = 0.23 MGD
Stream 7Q10 = 0.65 MGD
Stream 30Q10 = 0.92 MGD
Stream 1Q10 = 0.47 MGD
Stream slope = 0.0053 ft/ft
Stream width = 8 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .3608 ft
Length = 134.9 ft
Velocity = .4718 ft/sec
Residence Time = .0033 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .4262 ft
Length = 116.26 ft
Velocity = .5221 ft/sec
Residence Time = .0026 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3129 ft
Length = 153.14 ft
Velocity = .4325 ft/sec
Residence Time = .0984 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

Permit # VA0063843

Town of Gretna STP - Effluent Hardness Data

	Outfall 001 Effluent (mg/l)	Sample Date
	63	02/13/2003
	43	02/20/2003
	59	02/25/2003
	53	03/05/2003
	60	08/13/2003
Average:	**55.6**	

Town of Gretna STP - Receiving Stream (Georges Creek) Hardness Data

	Ambient Samples Georges Creek (mg/l)	Sample Date
	33	02/03/2003
	30	02/13/2003
	35	02/20/2003
	30	02/25/2003
	25	03/05/2003
Average:	**30.6**	

0.23 MGD

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Gretna STP Permit No.: VA0063843

Receiving Stream: Georges Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	30.6	mg/L
90% Temperature (Annual) =	23	deg C
90% Temperature (Wet season) =	12	deg C
90% Maximum pH =	7.8	SU
10% Maximum pH =	6.3	SU
Tier Designation (1 or 2) =	1	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	0.47	MGD
7Q10 (Annual) =	0.65	MGD
30Q10 (Annual) =	0.92	MGD
1Q10 (Wet season) =	1.23	MGD
30Q10 (Wet season)	2	MGD
30Q5 =	1.14	MGD
Harmonic Mean =	2.7	MGD
Annual Average =	NA	MGD

Mixing Information

Annual - 1Q10 Mix =	100	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	100	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	55.6	mg/L
90% Temp (Annual) =	23	deg C
90% Temp (Wet season) =	15	deg C
90% Maximum pH =	7.7	SU
10% Maximum pH =	6.97	SU
Discharge Flow =	0.23	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	–	–	na	2.7E+03	–	–	na	1.6E+04	–	–	–	–	–	–	–	–	–	–	na	1.6E+04
Acrolein	0	–	–	na	7.8E+02	–	–	na	4.6E+03	–	–	–	–	–	–	–	–	–	–	na	4.6E+03
Acrylonitrile[C]	0	–	–	na	6.6E+00	–	–	na	8.4E+01	–	–	–	–	–	–	–	–	–	–	na	8.4E+01
Aldrin [C]	0	3.0E+00	–	na	1.4E-03	9.1E+00	–	na	1.8E-02	–	–	–	–	–	–	–	–	9.1E+00	–	na	1.8E-02
Ammonia-N (mg/l) (Yearly)	0	1.29E+01	1.89E+00	na	–	3.9E+01	9.5E+00	na	–	–	–	–	–	–	–	–	–	3.9E+01	9.5E+00	na	–
Ammonia-N (mg/l) (High Flow)	0	1.25E+01	3.23E+00	na	–	7.9E+01	3.1E+01	na	–	–	–	–	–	–	–	–	–	7.9E+01	3.1E+01	na	–
Anthracene	0	–	–	na	1.1E+05	–	–	na	6.6E+05	–	–	–	–	–	–	–	–	–	–	na	6.6E+05
Antimony	0	–	–	na	4.3E+03	–	–	na	2.6E+04	–	–	–	–	–	–	–	–	–	–	na	2.6E+04
Arsenic	o	3.4E+02	1.5E+02	na	–	1.0E+03	5.7E+02	na	–	–	–	–	–	–	–	–	–	1.0E+03	5.7E+02	na	–
Barium	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Benzene [C]	0	–	–	na	7.1E+02	–	–	na	9.0E+03	–	–	–	–	–	–	–	–	–	–	na	9.0E+03
Benzidine[C]	0	–	–	na	5.4E-03	–	–	na	6.9E-02	–	–	–	–	–	–	–	–	–	–	na	6.9E-02
Benzo (a) anthracene [C]	0	–	–	na	4.9E-01	–	–	na	6.2E+00	–	–	–	–	–	–	–	–	–	–	na	6.2E+00
Benzo (b) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	6.2E+00	–	–	–	–	–	–	–	–	–	–	na	6.2E+00
Benzo (k) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	6.2E+00	–	–	–	–	–	–	–	–	–	–	na	6.2E+00
Benzo (a) pyrene [C]	0	–	–	na	4.9E-01	–	–	na	6.2E+00	–	–	–	–	–	–	–	–	–	–	na	6.2E+00
Bis2-Chloroethyl Ether	0	–	–	na	1.4E+01	–	–	na	8.3E+01	–	–	–	–	–	–	–	–	–	–	na	8.3E+01
Bis2-Chloroisopropyl Ether	0	–	–	na	1.7E+05	–	–	na	1.0E+06	–	–	–	–	–	–	–	–	–	–	na	1.0E+06
Bromoform [C]	0	–	–	na	3.6E+03	–	–	na	4.6E+04	–	–	–	–	–	–	–	–	–	–	na	4.6E+04
Butylbenzylphthalate	0	–	–	na	5.2E+03	–	–	na	3.1E+04	–	–	–	–	–	–	–	–	–	–	na	3.1E+04
Cadmium	0	1.3E+00	5.2E-01	na	–	4.1E+00	2.0E+00	na	–	–	–	–	–	–	–	–	–	4.1E+00	2.0E+00	na	–
Carbon Tetrachloride [C]	0	–	–	na	4.4E+01	–	–	na	5.6E+02	–	–	–	–	–	–	–	–	–	–	na	5.6E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	7.3E+00	1.6E-02	na	2.8E-01	–	–	–	–	–	–	–	–	7.3E+00	1.6E-02	na	2.8E-01
Chloride	0	8.6E+05	2.3E+05	na	–	2.6E+06	8.8E+05	na	–	–	–	–	–	–	–	–	–	2.6E+06	8.8E+05	na	–
TRC	0	1.9E+01	1.1E+01	na	–	5.8E+01	4.2E+01	na	–	–	–	–	–	–	–	–	–	5.8E+01	4.2E+01	na	–
Chlorobenzene	0	–	–	na	2.1E+04	–	–	na	1.3E+05	–	–	–	–	–	–	–	–	–	–	na	1.3E+05

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane [C]	0	--	--	na	3.4E+02	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	3.7E+05	--	--	--	--	--	--	--	--	--	--	na	3.7E+05
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	2.4E+03	--	--	--	--	--	--	--	--	--	--	na	2.4E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	2.5E-01	1.6E-01	na	--	--	--	--	--	--	--	--	--	2.5E-01	1.6E-01	na	--
Chromium III	0	2.6E+02	3.3E+01	na	--	8.0E+02	1.3E+02	na	--	--	--	--	--	--	--	--	--	8.0E+02	1.3E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	4.9E+01	4.2E+01	na	--	--	--	--	--	--	--	--	--	4.9E+01	4.2E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	6.2E+00	--	--	--	--	--	--	--	--	--	--	na	6.2E+00
Copper	0	5.5E+00	3.8E+00	na	--	1.7E+01	1.5E+01	na	--	--	--	--	--	--	--	--	--	1.7E+01	1.5E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	6.7E+01	2.0E+01	na	1.3E+06	--	--	--	--	--	--	--	--	6.7E+01	2.0E+01	na	1.3E+06
DDD [C]	0	--	--	na	8.4E-03	--	--	na	1.1E-01	--	--	--	--	--	--	--	--	--	--	na	1.1E-01
DDE [C]	0	--	--	na	5.9E-03	--	--	na	7.5E-02	--	--	--	--	--	--	--	--	--	--	na	7.5E-02
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	3.3E+00	3.8E-03	na	7.5E-02	--	--	--	--	--	--	--	--	3.3E+00	3.8E-03	na	7.5E-02
Demeton	0	--	1.0E-01	na	--	--	3.8E-01	na	--	--	--	--	--	--	--	--	--	--	3.8E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	6.2E+00	--	--	--	--	--	--	--	--	--	--	na	6.2E+00
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	7.1E+04	--	--	--	--	--	--	--	--	--	--	na	7.1E+04
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.0E+05	--	--	--	--	--	--	--	--	--	--	na	1.0E+05
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	1.5E+04	--	--	--	--	--	--	--	--	--	--	na	1.5E+04
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	1.5E+04	--	--	--	--	--	--	--	--	--	--	na	1.5E+04
3,3-Dichlorobenzidine [C]	0	--	--	na	7.7E-01	--	--	na	9.8E+00	--	--	--	--	--	--	--	--	--	--	na	9.8E+00
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.0E+05	--	--	--	--	--	--	--	--	--	--	na	1.0E+05
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	8.3E+05	--	--	--	--	--	--	--	--	--	--	na	8.3E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	4.7E+03	--	--	--	--	--	--	--	--	--	--	na	4.7E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane [C]	0	--	--	na	3.9E+02	--	--	na	5.0E+03	--	--	--	--	--	--	--	--	--	--	na	5.0E+03
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	7.3E-01	2.1E-01	na	1.8E-02	--	--	--	--	--	--	--	--	7.3E-01	2.1E-01	na	1.8E-02
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	7.1E+05	--	--	--	--	--	--	--	--	--	--	na	7.1E+05
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	7.5E+02	--	--	--	--	--	--	--	--	--	--	na	7.5E+02
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	1.7E+07	--	--	--	--	--	--	--	--	--	--	na	1.7E+07
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	7.1E+04	--	--	--	--	--	--	--	--	--	--	na	7.1E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	8.3E+04	--	--	--	--	--	--	--	--	--	--	na	8.3E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	4.6E+03	--	--	--	--	--	--	--	--	--	--	na	4.6E+03
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine [C]	0	--	--	na	5.4E+00	--	--	na	6.9E+01	--	--	--	--	--	--	--	--	--	--	na	6.9E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	6.7E-01	2.1E-01	na	1.4E+03	--	--	--	--	--	--	--	--	6.7E-01	2.1E-01	na	1.4E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	6.7E-01	2.1E-01	na	1.4E+03	--	--	--	--	--	--	--	--	6.7E-01	2.1E-01	na	1.4E+03
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	2.6E-01	1.4E-01	na	4.8E+00	--	--	--	--	--	--	--	--	2.6E-01	1.4E-01	na	4.8E+00
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	4.8E+00	--	--	--	--	--	--	--	--	--	--	na	4.8E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	–	–	na	2.9E+04	–	–	na	1.7E+05	–	–	–	–	–	–	–	–	–	–	na	1.7E+05
Fluoranthene	0	–	–	na	3.7E+02	–	–	na	2.2E+03	–	–	–	–	–	–	–	–	–	–	na	2.2E+03
Fluorene	0	–	–	na	1.4E+04	–	–	na	8.3E+04	–	–	–	–	–	–	–	–	–	–	na	8.3E+04
Foaming Agents	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Guthion	0	–	1.0E-02	na	–	–	3.8E-02	na	–	–	–	–	–	–	–	–	–	–	3.8E-02	na	–
Heptachlor [c]	0	5.2E-01	3.8E-03	na	2.1E-03	1.6E+00	1.5E-02	na	2.7E-02	–	–	–	–	–	–	–	–	1.6E+00	1.5E-02	na	2.7E-02
Heptachlor Epoxide[c]	0	5.2E-01	3.8E-03	na	1.1E-03	1.6E+00	1.5E-02	na	1.4E-02	–	–	–	–	–	–	–	–	1.6E+00	1.5E-02	na	1.4E-02
Hexachlorobenzene[c]	0	–	–	na	7.7E-03	–	–	na	9.8E-02	–	–	–	–	–	–	–	–	–	–	na	9.8E-02
Hexachlorobutadiene[c]	0	–	–	na	5.0E+02	–	–	na	6.4E+03	–	–	–	–	–	–	–	–	–	–	na	6.4E+03
Hexachlorocyclohexane Alpha-BHC[c]	0	–	–	na	1.3E-01	–	–	na	1.7E+00	–	–	–	–	–	–	–	–	–	–	na	1.7E+00
Hexachlorocyclohexane Beta-BHC[c]	0	–	–	na	4.6E-01	–	–	na	5.9E+00	–	–	–	–	–	–	–	–	–	–	na	5.9E+00
Hexachlorocyclohexane Gamma-BHC[c] (Lindane)	0	9.5E-01	na	na	6.3E-01	2.9E+00	–	na	8.0E+00	–	–	–	–	–	–	–	–	2.9E+00	–	na	8.0E+00
Hexachlorocyclopentadiene	0	–	–	na	1.7E+04	–	–	na	1.0E+05	–	–	–	–	–	–	–	–	–	–	na	1.0E+05
Hexachloroethane[c]	0	–	–	na	8.9E+01	–	–	na	1.1E+03	–	–	–	–	–	–	–	–	–	–	na	1.1E+03
Hydrogen Sulfide	0	–	2.0E+00	na	–	–	7.7E+00	na	–	–	–	–	–	–	–	–	–	–	7.7E+00	na	–
Indeno (1,2,3-cd) pyrene [c]	0	–	–	na	4.9E-01	–	–	na	6.2E+00	–	–	–	–	–	–	–	–	–	–	na	6.2E+00
Iron	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Isophorone[c]	0	–	–	na	2.6E+04	–	–	na	3.3E+05	–	–	–	–	–	–	–	–	–	–	na	3.3E+05
Kepone	0	–	0.0E+00	na	–	–	0.0E+00	na	–	–	–	–	–	–	–	–	–	–	0.0E+00	na	–
Lead	0	3.6E+01	3.8E+00	na	–	1.1E+02	1.5E+01	na	–	–	–	–	–	–	–	–	–	1.1E+02	1.5E+01	na	–
Malathion	0	–	1.0E-01	na	–	–	3.8E-01	na	–	–	–	–	–	–	–	–	–	–	3.8E-01	na	–
Manganese	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	4.3E+00	2.9E+00	na	3.0E-01	–	–	–	–	–	–	–	–	4.3E+00	2.9E+00	na	3.0E-01
Methyl Bromide	0	–	–	na	4.0E+03	–	–	na	2.4E+04	–	–	–	–	–	–	–	–	–	–	na	2.4E+04
Methoxychlor	0	–	3.0E-02	na	–	–	1.1E-01	na	–	–	–	–	–	–	–	–	–	–	1.1E-01	na	–
Mirex	0	–	0.0E+00	na	–	–	0.0E+00	na	–	–	–	–	–	–	–	–	–	–	0.0E+00	na	–
Monochlorobenzene	0	–	–	na	2.1E+04	–	–	na	1.3E+05	–	–	–	–	–	–	–	–	–	–	na	1.3E+05
Nickel	0	8.2E+01	8.8E+00	na	4.6E+03	2.5E+02	3.4E+01	na	2.7E+04	–	–	–	–	–	–	–	–	2.5E+02	3.4E+01	na	2.7E+04
Nitrate (as N)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Nitrobenzene	0	–	–	na	1.9E+03	–	–	na	1.1E+04	–	–	–	–	–	–	–	–	–	–	na	1.1E+04
N-Nitrosodimethylamine[c]	0	–	–	na	8.1E+01	–	–	na	1.0E+03	–	–	–	–	–	–	–	–	–	–	na	1.0E+03
N-Nitrosodiphenylamine[c]	0	–	–	na	1.6E+02	–	–	na	2.0E+03	–	–	–	–	–	–	–	–	–	–	na	2.0E+03
N-Nitrosodi-n-propylamine[c]	0	–	–	na	1.4E+01	–	–	na	1.8E+02	–	–	–	–	–	–	–	–	–	–	na	1.8E+02
Parathion	0	6.5E-02	1.3E-02	na	–	2.0E-01	5.0E-02	na	–	–	–	–	–	–	–	–	–	2.0E-01	5.0E-02	na	–
PCB-1016	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB-1221	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB-1232	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB-1242	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB-1248	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB-1254	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB-1260	0	–	1.4E-02	na	–	–	5.4E-02	na	–	–	–	–	–	–	–	–	–	–	5.4E-02	na	–
PCB Total[c]	0	–	–	na	1.7E-03	–	–	na	2.2E-02	–	–	–	–	–	–	–	–	–	–	na	2.2E-02

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	4.9E+00	3.7E+00	na	8.2E+01	1.5E+01	1.4E+01	na	1.0E+03	--	--	--	--	--	--	--	--	1.5E+01	1.4E+01	na	1.0E+03
Phenol	0	--	--	na	4.6E+06	--	--	na	2.7E+07	--	--	--	--	--	--	--	--	--	--	na	2.7E+07
Pyrene	0	--	--	na	1.1E+04	--	--	na	6.6E+04	--	--	--	--	--	--	--	--	--	--	na	6.6E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Strontium-90	0	--	--	na	8.0E+00	--	--	na	4.8E+01	--	--	--	--	--	--	--	--	--	--	na	4.8E+01
Tritium	0	--	--	na	2.0E+04	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	6.1E+01	1.9E+01	na	6.6E+04	--	--	--	--	--	--	--	--	6.1E+01	1.9E+01	na	6.6E+04
Silver	0	6.8E-01	--	na	--	2.1E+00	--	na	--	--	--	--	--	--	--	--	--	2.1E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	1.1E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Tetrachloroethylene[C]	0	--	--	na	8.9E+01	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Thallium	0	--	--	na	6.3E+00	--	--	na	3.8E+01	--	--	--	--	--	--	--	--	--	--	na	3.8E+01
Toluene	0	--	--	na	2.0E+05	--	--	na	1.2E+06	--	--	--	--	--	--	--	--	--	--	na	1.2E+06
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	2.2E+00	7.7E-04	na	9.6E-02	--	--	--	--	--	--	--	--	2.2E+00	7.7E-04	na	9.6E-02
Tributyltin	0	4.6E-01	6.3E-02	na	--	1.4E+00	2.4E-01	na	--	--	--	--	--	--	--	--	--	1.4E+00	2.4E-01	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	5.6E+03	--	--	--	--	--	--	--	--	--	--	na	5.6E+03
1,1,2-Trichloroethane[C]	0	--	--	na	4.2E+02	--	--	na	5.4E+03	--	--	--	--	--	--	--	--	--	--	na	5.4E+03
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	8.3E+02	--	--	--	--	--	--	--	--	--	--	na	8.3E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	6.1E+01	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Zinc	0	5.3E+01	5.1E+01	na	6.9E+04	1.6E+02	2.0E+02	na	4.1E+05	--	--	--	--	--	--	--	--	1.6E+02	2.0E+02	na	4.1E+05

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	2.6E+04
Arsenic	3.4E+02
Barium	na
Cadmium	1.2E+00
Chromium III	7.6E+01
Chromium VI	1.9E+01
Copper	6.7E+00
Iron	na
Lead	8.8E+00
Manganese	na
Mercury	3.0E-01
Nickel	2.0E+01
Selenium	1.1E+01
Silver	8.2E-01
Zinc	6.4E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.35 MGD)

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Gretna STP Permit No.: VA0063843

Receiving Stream: Georges Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	30.6 mg/L
90% Temperature (Annual) =	23 deg C
90% Temperature (Wet season) =	12 deg C
90% Maximum pH =	7.8 SU
10% Maximum pH =	6.3 SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0.47 MGD
7Q10 (Annual) =	0.65 MGD
30Q10 (Annual) =	0.92 MGD
1Q10 (Wet season) =	1.23 MGD
30Q10 (Wet season)	2 MGD
30Q5 =	1.14 MGD
Harmonic Mean =	2.7 MGD
Annual Average =	NA MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	55.6 mg/L
90% Temp (Annual) =	23 deg C
90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.7 SU
10% Maximum pH =	6.97 SU
Discharge Flow =	0.35 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	–	–	na	2.7E+03	–	–	na	1.1E+04	–	–	–	–	–	–	–	–	–	–	na	1.1E+04
Acrolein	0	–	–	na	7.8E+02	–	–	na	3.3E+03	–	–	–	–	–	–	–	–	–	–	na	3.3E+03
Acrylonitrile [C]	0	–	–	na	6.6E+00	–	–	na	5.8E+01	–	–	–	–	–	–	–	–	–	–	na	5.8E+01
Aldrin [C]	0	3.0E+00	–	na	1.4E-03	7.0E+00	–	na	1.2E-02	–	–	–	–	–	–	–	–	7.0E+00	–	na	1.2E-02
Ammonia-N (mg/l) (Yearly)	0	1.32E+01	1.91E+00	na	–	3.1E+01	6.9E+00	na	–	–	–	–	–	–	–	–	–	3.1E+01	6.9E+00	na	–
Ammonia-N (mg/l) (High Flow)	0	1.27E+01	3.25E+00	na	–	5.7E+01	2.2E+01	na	–	–	–	–	–	–	–	–	–	5.7E+01	2.2E+01	na	–
Anthracene	0	–	–	na	1.1E+05	–	–	na	4.7E+05	–	–	–	–	–	–	–	–	–	–	na	4.7E+05
Antimony	0	–	–	na	4.3E+03	–	–	na	1.8E+04	–	–	–	–	–	–	–	–	–	–	na	1.8E+04
Arsenic	o	3.4E+02	1.5E+02	na	–	8.0E+02	4.3E+02	na	–	–	–	–	–	–	–	–	–	8.0E+02	4.3E+02	na	–
Barium	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Benzene [C]	0	–	–	na	7.1E+02	–	–	na	6.2E+03	–	–	–	–	–	–	–	–	–	–	na	6.2E+03
Benzidine [C]	0	–	–	na	5.4E-03	–	–	na	4.7E-02	–	–	–	–	–	–	–	–	–	–	na	4.7E-02
Benzo (a) anthracene [C]	0	–	–	na	4.9E-01	–	–	na	4.3E+00	–	–	–	–	–	–	–	–	–	–	na	4.3E+00
Benzo (b) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	4.3E+00	–	–	–	–	–	–	–	–	–	–	na	4.3E+00
Benzo (k) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	4.3E+00	–	–	–	–	–	–	–	–	–	–	na	4.3E+00
Benzo (a) pyrene [C]	0	–	–	na	4.9E-01	–	–	na	4.3E+00	–	–	–	–	–	–	–	–	–	–	na	4.3E+00
Bis2-Chloroethyl Ether	0	–	–	na	1.4E+01	–	–	na	6.0E+01	–	–	–	–	–	–	–	–	–	–	na	6.0E+01
Bis2-Chloroisopropyl Ether	0	–	–	na	1.7E+05	–	–	na	7.2E+05	–	–	–	–	–	–	–	–	–	–	na	7.2E+05
Bromoform [C]	0	–	–	na	3.6E+03	–	–	na	3.1E+04	–	–	–	–	–	–	–	–	–	–	na	3.1E+04
Butylbenzylphthalate	0	–	–	na	5.2E+03	–	–	na	2.2E+04	–	–	–	–	–	–	–	–	–	–	na	2.2E+04
Cadmium	0	1.4E+00	5.5E-01	na	–	3.4E+00	1.6E+00	na	–	–	–	–	–	–	–	–	–	3.4E+00	1.6E+00	na	–
Carbon Tetrachloride [C]	0	–	–	na	4.4E+01	–	–	na	3.8E+02	–	–	–	–	–	–	–	–	–	–	na	3.8E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	5.6E+00	1.2E-02	na	1.9E-01	–	–	–	–	–	–	–	–	5.6E+00	1.2E-02	na	1.9E-01
Chloride	0	8.6E+05	2.3E+05	na	–	2.0E+06	6.6E+05	na	–	–	–	–	–	–	–	–	–	2.0E+06	6.6E+05	na	–
TRC	0	1.9E+01	1.1E+01	na	–	4.5E+01	3.1E+01	na	–	–	–	–	–	–	–	–	–	4.5E+01	3.1E+01	na	–
Chlorobenzene	0	–	–	na	2.1E+04	–	–	na	8.9E+04	–	–	–	–	–	–	–	–	–	–	na	8.9E+04

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane [C]	0	–	–	na	3.4E+02	–	–	na	3.0E+03	–	–	–	–	–	–	–	–	–	–	na	3.0E+03
Chloroform [C]	0	–	–	na	2.9E+04	–	–	na	2.5E+05	–	–	–	–	–	–	–	–	–	–	na	2.5E+05
2-Chloronaphthalene	0	–	–	na	4.3E+03	–	–	na	1.8E+04	–	–	–	–	–	–	–	–	–	–	na	1.8E+04
2-Chlorophenol	0	–	–	na	4.0E+02	–	–	na	1.7E+03	–	–	–	–	–	–	–	–	–	–	na	1.7E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	–	1.9E-01	1.2E-01	na	–	–	–	–	–	–	–	–	–	1.9E-01	1.2E-01	na	–
Chromium III	0	2.8E+02	3.5E+01	na	–	6.5E+02	9.9E+01	na	–	–	–	–	–	–	–	–	–	6.5E+02	9.9E+01	na	–
Chromium VI	0	1.6E+01	1.1E+01	na	–	3.7E+01	3.1E+01	na	–	–	–	–	–	–	–	–	–	3.7E+01	3.1E+01	na	–
Chromium, Total	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Chrysene [C]	0	–	–	na	4.9E-01	–	–	na	4.3E+00	–	–	–	–	–	–	–	–	–	–	na	4.3E+00
Copper	0	5.8E+00	4.0E+00	na	–	1.4E+01	1.2E+01	na	–	–	–	–	–	–	–	–	–	1.4E+01	1.2E+01	na	–
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	5.2E+01	1.5E+01	na	9.2E+05	–	–	–	–	–	–	–	–	5.2E+01	1.5E+01	na	9.2E+05
DDD [C]	0	–	–	na	8.4E-03	–	–	na	7.3E-02	–	–	–	–	–	–	–	–	–	–	na	7.3E-02
DDE [C]	0	–	–	na	5.9E-03	–	–	na	5.1E-02	–	–	–	–	–	–	–	–	–	–	na	5.1E-02
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	2.6E+00	2.9E-03	na	5.1E-02	–	–	–	–	–	–	–	–	2.6E+00	2.9E-03	na	5.1E-02
Demeton	0	–	1.0E-01	na	–	–	2.9E-01	na	–	–	–	–	–	–	–	–	–	–	2.9E-01	na	–
Dibenz(a,h)anthracene [C]	0	–	–	na	4.9E-01	–	–	na	4.3E+00	–	–	–	–	–	–	–	–	–	–	na	4.3E+00
Dibutyl phthalate	0	–	–	na	1.2E+04	–	–	na	5.1E+04	–	–	–	–	–	–	–	–	–	–	na	5.1E+04
Dichloromethane (Methylene Chloride) [C]	0	–	–	na	1.6E+04	–	–	na	1.4E+05	–	–	–	–	–	–	–	–	–	–	na	1.4E+05
1,2-Dichlorobenzene	0	–	–	na	1.7E+04	–	–	na	7.2E+04	–	–	–	–	–	–	–	–	–	–	na	7.2E+04
1,3-Dichlorobenzene	0	–	–	na	2.6E+03	–	–	na	1.1E+04	–	–	–	–	–	–	–	–	–	–	na	1.1E+04
1,4-Dichlorobenzene	0	–	–	na	2.6E+03	–	–	na	1.1E+04	–	–	–	–	–	–	–	–	–	–	na	1.1E+04
3,3-Dichlorobenzidine [C]	0	–	–	na	7.7E-01	–	–	na	6.7E+00	–	–	–	–	–	–	–	–	–	–	na	6.7E+00
Dichlorobromomethane [C]	0	–	–	na	4.6E+02	–	–	na	4.0E+03	–	–	–	–	–	–	–	–	–	–	na	4.0E+03
1,2-Dichloroethane [C]	0	–	–	na	9.9E+02	–	–	na	8.6E+03	–	–	–	–	–	–	–	–	–	–	na	8.6E+03
1,1-Dichloroethylene	0	–	–	na	1.7E+04	–	–	na	7.2E+04	–	–	–	–	–	–	–	–	–	–	na	7.2E+04
1,2-trans-dichloroethylene	0	–	–	na	1.4E+05	–	–	na	6.0E+05	–	–	–	–	–	–	–	–	–	–	na	6.0E+05
2,4-Dichlorophenol	0	–	–	na	7.9E+02	–	–	na	3.4E+03	–	–	–	–	–	–	–	–	–	–	na	3.4E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
1,2-Dichloropropane [C]	0	–	–	na	3.9E+02	–	–	na	3.4E+03	–	–	–	–	–	–	–	–	–	–	na	3.4E+03
1,3-Dichloropropene	0	–	–	na	1.7E+03	–	–	na	7.2E+03	–	–	–	–	–	–	–	–	–	–	na	7.2E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	5.6E-01	1.6E-01	na	1.2E-02	–	–	–	–	–	–	–	–	5.6E-01	1.6E-01	na	1.2E-02
Diethyl Phthalate	0	–	–	na	1.2E+05	–	–	na	5.1E+05	–	–	–	–	–	–	–	–	–	–	na	5.1E+05
Di-2-Ethylhexyl Phthalate [C]	0	–	–	na	5.9E+01	–	–	na	5.1E+02	–	–	–	–	–	–	–	–	–	–	na	5.1E+02
2,4-Dimethylphenol	0	–	–	na	2.3E+03	–	–	na	9.8E+03	–	–	–	–	–	–	–	–	–	–	na	9.8E+03
Dimethyl Phthalate	0	–	–	na	2.9E+06	–	–	na	1.2E+07	–	–	–	–	–	–	–	–	–	–	na	1.2E+07
Di-n-Butyl Phthalate	0	–	–	na	1.2E+04	–	–	na	5.1E+04	–	–	–	–	–	–	–	–	–	–	na	5.1E+04
2,4 Dinitrophenol	0	–	–	na	1.4E+04	–	–	na	6.0E+04	–	–	–	–	–	–	–	–	–	–	na	6.0E+04
2-Methyl-4,6-Dinitrophenol	0	–	–	na	7.65E+02	–	–	na	3.3E+03	–	–	–	–	–	–	–	–	–	–	na	3.3E+03
2,4-Dinitrotoluene [C]	0	–	–	na	9.1E+01	–	–	na	7.9E+02	–	–	–	–	–	–	–	–	–	–	na	7.9E+02
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	–	–	na	1.2E-06	–	–	na	na	–	–	–	–	–	–	–	–	–	–	na	na
1,2-Diphenylhydrazine [C]	0	–	–	na	5.4E+00	–	–	na	4.7E+01	–	–	–	–	–	–	–	–	–	–	na	4.7E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	5.2E-01	1.6E-01	na	1.0E+03	–	–	–	–	–	–	–	–	5.2E-01	1.6E-01	na	1.0E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	5.2E-01	1.6E-01	na	1.0E+03	–	–	–	–	–	–	–	–	5.2E-01	1.6E-01	na	1.0E+03
Endosulfan Sulfate	0	–	–	na	2.4E+02	–	–	na	1.0E+03	–	–	–	–	–	–	–	–	–	–	na	1.0E+03
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	2.0E-01	1.0E-01	na	3.4E+00	–	–	–	–	–	–	–	–	2.0E-01	1.0E-01	na	3.4E+00
Endrin Aldehyde	0	–	–	na	8.1E-01	–	–	na	3.4E+00	–	–	–	–	–	–	–	–	–	–	na	3.4E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
Fluorene	0	--	--	na	1.4E+04	--	--	na	6.0E+04	--	--	--	--	--	--	--	--	--	--	na	6.0E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	2.9E-02	na	--	--	--	--	--	--	--	--	--	--	2.9E-02	na	--
Heptachlor [c]	0	5.2E-01	3.8E-03	na	2.1E-03	1.2E+00	1.1E-02	na	1.8E-02	--	--	--	--	--	--	--	--	1.2E+00	1.1E-02	na	1.8E-02
Heptachlor Epoxide[c]	0	5.2E-01	3.8E-03	na	1.1E-03	1.2E+00	1.1E-02	na	9.6E-03	--	--	--	--	--	--	--	--	1.2E+00	1.1E-02	na	9.6E-03
Hexachlorobenzene[c]	0	--	--	na	7.7E-03	--	--	na	6.7E-02	--	--	--	--	--	--	--	--	--	--	na	6.7E-02
Hexachlorobutadiene[c]	0	--	--	na	5.0E+02	--	--	na	4.4E+03	--	--	--	--	--	--	--	--	--	--	na	4.4E+03
Hexachlorocyclohexane Alpha-BHC[c]	0	--	--	na	1.3E-01	--	--	na	1.1E+00	--	--	--	--	--	--	--	--	--	--	na	1.1E+00
Hexachlorocyclohexane Beta-BHC[c]	0	--	--	na	4.6E-01	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Hexachlorocyclohexane Gamma-BHC[c] (Lindane)	0	9.5E-01	na	na	6.3E-01	2.2E+00	--	na	5.5E+00	--	--	--	--	--	--	--	--	2.2E+00	--	na	5.5E+00
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	7.2E+04	--	--	--	--	--	--	--	--	--	--	na	7.2E+04
Hexachloroethane[c]	0	--	--	na	8.9E+01	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	5.7E+00	na	--	--	--	--	--	--	--	--	--	--	5.7E+00	na	--
Indeno (1,2,3-cd) pyrene [c]	0	--	--	na	4.9E-01	--	--	na	4.3E+00	--	--	--	--	--	--	--	--	--	--	na	4.3E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[c]	0	--	--	na	2.6E+04	--	--	na	2.3E+05	--	--	--	--	--	--	--	--	--	--	na	2.3E+05
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	3.9E+01	4.1E+00	na	--	9.0E+01	1.2E+01	na	--	--	--	--	--	--	--	--	--	9.0E+01	1.2E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	2.9E-01	na	--	--	--	--	--	--	--	--	--	--	2.9E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	3.3E+00	2.2E+00	na	2.2E-01	--	--	--	--	--	--	--	--	3.3E+00	2.2E+00	na	2.2E-01
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Methoxychlor	0	--	3.0E-02	na	--	--	8.6E-02	na	--	--	--	--	--	--	--	--	--	--	8.6E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	8.9E+04	--	--	--	--	--	--	--	--	--	--	na	8.9E+04
Nickel	0	8.6E+01	9.2E+00	na	4.6E+03	2.0E+02	2.6E+01	na	2.0E+04	--	--	--	--	--	--	--	--	2.0E+02	2.6E+01	na	2.0E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	8.1E+03	--	--	--	--	--	--	--	--	--	--	na	8.1E+03
N-Nitrosodimethylamine[c]	0	--	--	na	8.1E+01	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
N-Nitrosodiphenylamine[c]	0	--	--	na	1.6E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
N-Nitrosodi-n-propylamine[c]	0	--	--	na	1.4E+01	--	--	na	1.2E+02	--	--	--	--	--	--	--	--	--	--	na	1.2E+02
Parathion	0	6.5E-02	1.3E-02	na	--	1.5E-01	3.7E-02	na	--	--	--	--	--	--	--	--	--	1.5E-01	3.7E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	4.0E-02	na	--	--	--	--	--	--	--	--	--	--	4.0E-02	na	--
PCB Total[c]	0	--	--	na	1.7E-03	--	--	na	1.5E-02	--	--	--	--	--	--	--	--	--	--	na	1.5E-02

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	5.2E+00	3.8E+00	na	8.2E+01	1.2E+01	1.1E+01	na	7.1E+02	–	–	–	–	–	–	–	–	1.2E+01	1.1E+01	na	7.1E+02
Phenol	0	–	–	na	4.6E+06	–	–	na	2.0E+07	–	–	–	–	–	–	–	–	–	–	na	2.0E+07
Pyrene	0	–	–	na	1.1E+04	–	–	na	4.7E+04	–	–	–	–	–	–	–	–	–	–	na	4.7E+04
Radionuclides (pCi/l except Beta/Photon)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Gross Alpha Activity	0	–	–	na	1.5E+01	–	–	na	6.4E+01	–	–	–	–	–	–	–	–	–	–	na	6.4E+01
Beta and Photon Activity (mrem/yr)	0	–	–	na	4.0E+00	–	–	na	1.7E+01	–	–	–	–	–	–	–	–	–	–	na	1.7E+01
Strontium-90	0	–	–	na	8.0E+00	–	–	na	3.4E+01	–	–	–	–	–	–	–	–	–	–	na	3.4E+01
Tritium	0	–	–	na	2.0E+04	–	–	na	8.5E+04	–	–	–	–	–	–	–	–	–	–	na	8.5E+04
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	4.7E+01	1.4E+01	na	4.7E+04	–	–	–	–	–	–	–	–	4.7E+01	1.4E+01	na	4.7E+04
Silver	0	7.5E-01	–	na	–	1.8E+00	–	na	–	–	–	–	–	–	–	–	–	1.8E+00	–	na	–
Sulfate	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
1,1,2,2-Tetrachloroethane [C]	0	–	–	na	1.1E+02	–	–	na	9.6E+02	–	–	–	–	–	–	–	–	–	–	na	9.6E+02
Tetrachloroethylene [C]	0	–	–	na	8.9E+01	–	–	na	7.8E+02	–	–	–	–	–	–	–	–	–	–	na	7.8E+02
Thallium	0	–	–	na	6.3E+00	–	–	na	2.7E+01	–	–	–	–	–	–	–	–	–	–	na	2.7E+01
Toluene	0	–	–	na	2.0E+05	–	–	na	8.5E+05	–	–	–	–	–	–	–	–	–	–	na	8.5E+05
Total dissolved solids	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	1.7E+00	5.7E-04	na	6.5E-02	–	–	–	–	–	–	–	–	1.7E+00	5.7E-04	na	6.5E-02
Tributyltin	0	4.6E-01	6.3E-02	na	–	1.1E+00	1.8E-01	na	–	–	–	–	–	–	–	–	–	1.1E+00	1.8E-01	na	–
1,2,4-Trichlorobenzene	0	–	–	na	9.4E+02	–	–	na	4.0E+03	–	–	–	–	–	–	–	–	–	–	na	4.0E+03
1,1,2-Trichloroethane [C]	0	–	–	na	4.2E+02	–	–	na	3.7E+03	–	–	–	–	–	–	–	–	–	–	na	3.7E+03
Trichloroethylene [C]	0	–	–	na	8.1E+02	–	–	na	7.1E+03	–	–	–	–	–	–	–	–	–	–	na	7.1E+03
2,4,6-Trichlorophenol [C]	0	–	–	na	6.5E+01	–	–	na	5.7E+02	–	–	–	–	–	–	–	–	–	–	na	5.7E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Vinyl Chloride [C]	0	–	–	na	6.1E+01	–	–	na	5.3E+02	–	–	–	–	–	–	–	–	–	–	na	5.3E+02
Zinc	0	5.5E+01	5.4E+01	na	6.9E+04	1.3E+02	1.5E+02	na	2.9E+05	–	–	–	–	–	–	–	–	1.3E+02	1.5E+02	na	2.9E+05

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	1.8E+04
Arsenic	2.6E+02
Barium	na
Cadmium	9.3E-01
Chromium III	5.9E+01
Chromium VI	1.5E+01
Copper	5.5E+00
Iron	na
Lead	7.1E+00
Manganese	na
Mercury	2.2E-01
Nickel	1.6E+01
Selenium	8.6E+00
Silver	7.1E-01
Zinc	5.2E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

7/21/2009 3:57:37 PM

Facility = Gretna STP @ 0.23 MGD
Chemical = TRC
Chronic averaging period = 4
WLAa = 58
WLAc = 42
Q.L. = 100
# samples/mo. = 30
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = 1000
Variance = 360000
C.V. = 0.6
97th percentile daily values = 2433.41
97th percentile 4 day average = 1663.79
97th percentile 30 day average= 1206.05
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 58
Average Weekly limit = 35.4210179916177
Average Monthly LImit = 28.7460275043254

Current Limits are protective.

The data are:

1000

7/21/2009 3:56:16 PM

Facility = Gretna STP @ 0.35 MGD
Chemical = TRC
Chronic averaging period = 4
WLAa = 45
WLAc = 31
Q.L. = 100
# samples/mo. = 30
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = 1000
Variance = 360000
C.V. = 0.6
97th percentile daily values = 2433.41
97th percentile 4 day average = 1663.79
97th percentile 30 day average= 1206.05
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 45
Average Weekly limit = 27.4818243038413
Average Monthly LImit = 22.3029523740456

Current Limits are protective.

The data are:

1000

7/21/2009 3:52:05 PM

Facility = Gretna STP @ 0.23 MGD
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 39
WLAc = 9.5
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 19.167865887455
Average Weekly limit = 19.167865887455
Average Monthly LImit = 19.167865887455

Current Limits Are Protective.

The data are:

9

7/21/2009 3:54:46 PM

Facility = Gretna STP @ 0.35 MGD
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 31
WLAc = 6.9
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 13.9219236445725
Average Weekly limit = 13.9219236445725
Average Monthly LImit = 13.9219236445725

Current Limits are protective.

The data are:

9

Complies with e-mail dated 1/29/03 (QLs & USE OF DATA IN STATS.EXE)

QL per Attachment A = 5.00

Uncensored (>QL) Data	Censored ("<") Data
14	< \ 10
9	< Value
10	< Value
7	< Value
5	< Value
Value	< Value
Value	< Value
Value	< Value
Value	< Value
Value	< Value

Intermediate Values
5
10
1000000

PROCEDURE

STATS Run #1:

Run STATS.exe using: QL = 5 and
Uncensored data in yellow cells.

No Limit Required: Analysis concluded - no limit required
Limit Required: Procede to STATS Run #2

STATS Run #2:

Run STATS.exe using QL = 5 and
Uncensored data in yellow cells and
specified Censored data in green cells.

No Limit Required: Analysis concluded - no limit required
Limit Required: Include both runs of STATS in Fact Sheet and limit in Draft Permit

7/21/2009 4:26:35 PM

Facility = Gretna STP @ 0.23 MGD
Chemical = Copper
Chronic averaging period = 4
WLAa = 17
WLAc = 15
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 5
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 17
Average Weekly limit = 17
Average Monthly LImit = 17

New Limit with this reissuance.

The data are:

14
9
10
7
5

* Data generated after Town Implemented dissolved Cu corrective actions.

7/21/2009 4:27:57 PM

Facility = Gretna STP @ 0.35 MGD
Chemical = Copper
Chronic averaging period = 4
WLAa = 14
WLAc = 12
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 5
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 14
Average Weekly limit = 14
Average Monthly LImit = 14

Revised limit with this reissuance.

The data are:

14
9
10
7
5

* Data generated after town implemented dissolved Cu corrective actions.

Complies with e-mail dated 1/29/03 (QLs & USE OF DATA IN STATS.EXE)

QL per Attachment A = 20.00

Uncensored (>QL) Data	Censored ("<") Data
60	< \20
26	< \20
26	< \20
12	< \20
Value	< \20
Value	< Value
Value	< Value
Value	< Value
Value	< Value
Value	< Value

Intermediate Values
12
20
1000000

PROCEDURE

STATS Run #1:

Run STATS.exe using: QL = 20 and
Uncensored data in yellow cells.

No Limit Required: Analysis concluded - no limit required
Limit Required: Procede to STATS Run #2

STATS Run #2:

Run STATS.exe using QL = 12 and
Uncensored data in yellow cells and
specified Censored data in green cells.

No Limit Required: Analysis concluded - no limit required
Limit Required: Include both runs of STATS in Fact Sheet and limit in Draft Permit

7/23/2009 1:50:18 PM

Facility = Gretna STP @ 0.23 MGD
Chemical = Zinc
Chronic averaging period = 4
WLAa = 160
WLAc = 200
Q.L. = 20
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 4
Expected Value = 33.9026
Variance = 413.780
C.V. = 0.6
97th percentile daily values = 82.4993
97th percentile 4 day average = 56.4069
97th percentile 30 day average= 40.8884
< Q.L. = 1
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

60
26
26
12

7/23/2009 1:54:43 PM

Facility = Gretna STP @ 0.35
Chemical = Zinc
Chronic averaging period = 4
WLAa = 130
WLAc = 150
Q.L. = 20
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 4
Expected Value = 33.9026
Variance = 413.780
C.V. = 0.6
97th percentile daily values = 82.4993
97th percentile 4 day average = 56.4069
97th percentile 30 day average= 40.8884
< Q.L. = 1
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

60
26
26
12

Town of Gretna
Sewage Treatment Plant

	Sample Date	Zinc (mg/L)
1	2/3/2003	0.060
2	2/20/2003	< 0.020
3	3/5/2003	< 0.020
4	3/18/2003	0.026
5	4/3/2003	< 0.020
6	6/11/2003	< 0.020
7	8/13/2003	< 0.020
8	10/22/2003	0.026
9	12/23/2003	0.015
10	2/4/2004	0.012

NOTE: All values reported as Dissolved Zinc with exception of 12/23/03 value, which is suspected to be Dissolved, but which was reported as Total Zinc by laboratory.

Town of Gretna Sewage Treatment Plant
Outfall 001 Effluent Flow

Date	Influent Quanity (MGD)	
	Average	Maximum
10-Sep-2004	0.176	0.66
10-Oct-2004	0.181	0.504
10-Nov-2004	0.136	0.163
10-Dec-2004	0.196	0.508
10-Jan-2005	0.162	0.496
10-Feb-2005	0.154	0.59
10-Mar-2005	0.145	0.172
10-Apr-2005	0.187	0.251
10-May-2005	0.146	0.172
10-Jun-2005	0.148	0.2
10-Jul-2005	0.151	0.388
10-Aug-2005	0.148	0.455
10-Sep-2005	0.142	0.243
10-Oct-2005	0.145	0.174
10-Nov-2005	0.154	0.207
10-Dec-2005	0.142	0.543
10-Jan-2006	0.158	0.575
10-Feb-2006	0.129	0.245
10-Mar-2006	0.159	0.196
10-Apr-2006	0.143	0.166
10-May-2006	0.135	0.194
10-Jun-2006	0.148	0.187
10-Jul-2006	0.133	0.303
10-Aug-2006	0.118	0.169
10-Sep-2006	0.136	0.219
10-Oct-2006	0.18	0.532
10-Nov-2006	0.169	0.193
10-Dec-2006	0.2	0.39
10-Jan-2007	0.216	0.248
10-Feb-2007	0.184	0.359
10-Mar-2007	0.177	0.472
10-Apr-2007	0.194	0.326
10-May-2007	0.169	0.269
10-Jun-2007	0.167	0.213
10-Jul-2007	0.136	0.174
10-Aug-2007	0.126	0.193
10-Sep-2007	0.134	0.151
10-Oct-2007	0.137	0.219
10-Nov-2007	0.163	0.416
10-Dec-2007	0.147	0.195
10-Jan-2008	0.148	0.174
10-Feb-2008	0.147	0.245
10-Mar-2008	0.16	0.168
10-Apr-2008	0.149	0.238
10-May-2008	0.215	0.544

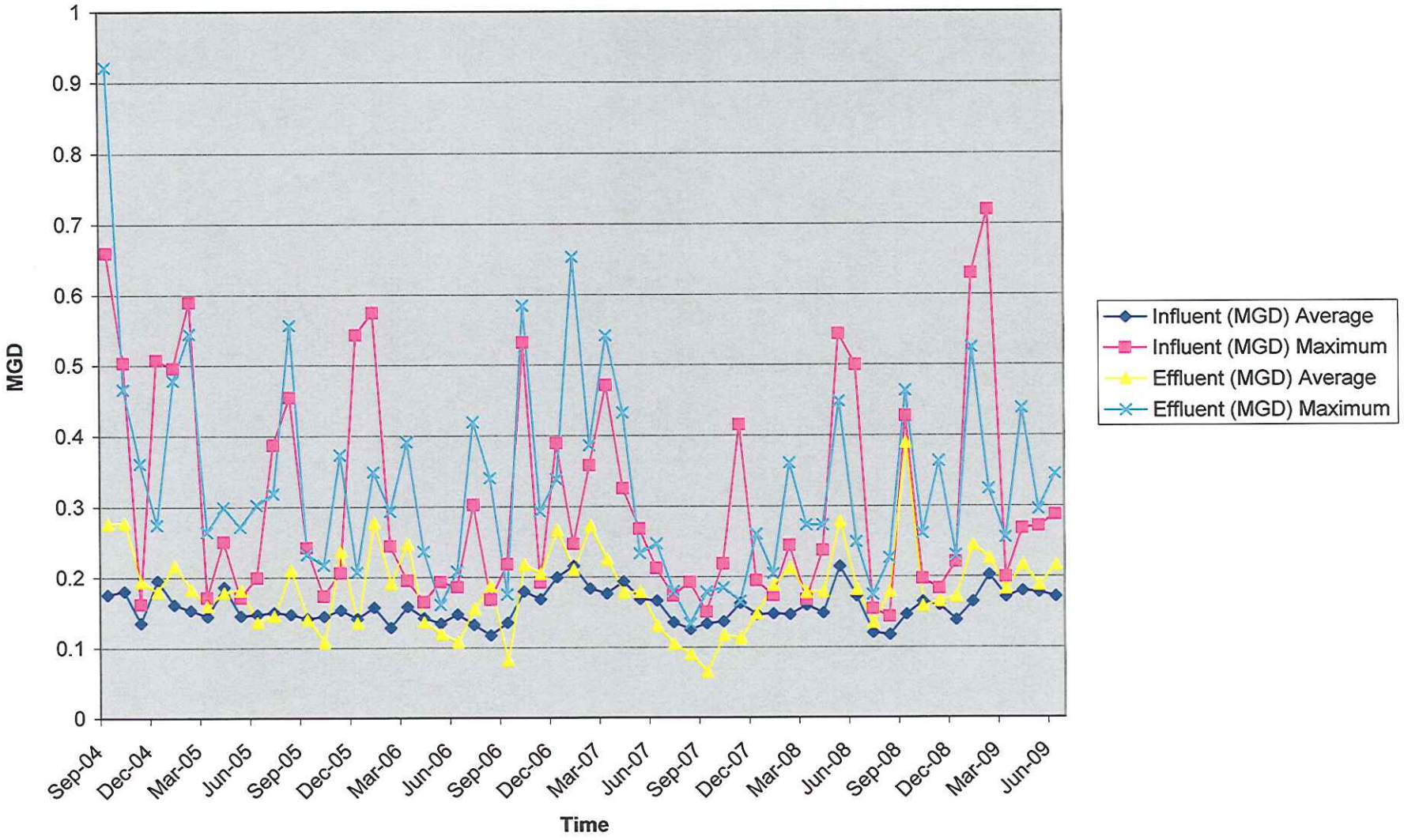
Date	Effluent Quanity (MGD)	
	Average	Maximum
10-Sep-2004	0.276	0.922
10-Oct-2004	0.277	0.467
10-Nov-2004	0.194	0.362
10-Dec-2004	0.18	0.275
10-Jan-2005	0.216	0.479
10-Feb-2005	0.183	0.545
10-Mar-2005	0.16	0.265
10-Apr-2005	0.179	0.3
10-May-2005	0.182	0.272
10-Jun-2005	0.137	0.303
10-Jul-2005	0.146	0.319
10-Aug-2005	0.21	0.557
10-Sep-2005	0.141	0.233
10-Oct-2005	0.108	0.218
10-Nov-2005	0.237	0.374
10-Dec-2005	0.136	0.208
10-Jan-2006	0.277	0.35
10-Feb-2006	0.191	0.294
10-Mar-2006	0.247	0.392
10-Apr-2006	0.137	0.237
10-May-2006	0.12	0.162
10-Jun-2006	0.108	0.209
10-Jul-2006	0.155	0.42
10-Aug-2006	0.188	0.341
10-Sep-2006	0.082	0.176
10-Oct-2006	0.218	0.585
10-Nov-2006	0.205	0.294
10-Dec-2006	0.266	0.339
10-Jan-2007	0.211	0.654
10-Feb-2007	0.273	0.387
10-Mar-2007	0.225	0.542
10-Apr-2007	0.178	0.433
10-May-2007	0.179	0.234
10-Jun-2007	0.131	0.248
10-Jul-2007	0.105	0.18
10-Aug-2007	0.09	0.134
10-Sep-2007	0.065	0.179
10-Oct-2007	0.117	0.185
10-Nov-2007	0.113	0.166
10-Dec-2007	0.148	0.261
10-Jan-2008	0.188	0.205
10-Feb-2008	0.213	0.362
10-Mar-2008	0.178	0.274
10-Apr-2008	0.179	0.274
10-May-2008	0.278	0.449

Town of Gretna Sewage Treatment Plant
Outfall 001 Effluent Flow

Date	Influent Quanity (MGD)	
	Average	Maximum
10-Jun-2008	0.173	0.5
10-Jul-2008	0.121	0.155
10-Aug-2008	0.118	0.144
10-Sep-2008	0.147	0.428
10-Oct-2008	0.165	0.198
10-Nov-2008	0.16	0.184
10-Dec-2008	0.139	0.222
10-Jan-2009	0.165	0.63
10-Feb-2009	0.203	0.72
10-Mar-2009	0.172	0.2
10-Apr-2009	0.18	0.269
10-May-2009	0.178	0.272
10-Jun-2009	0.172	0.288

Date	Effluent Quanity (MGD)	
	Average	Maximum
10-Jun-2008	0.182	0.25
10-Jul-2008	0.135	0.175
10-Aug-2008	0.179	0.227
10-Sep-2008	0.39	0.464
10-Oct-2008	0.159	0.262
10-Nov-2008	0.166	0.365
10-Dec-2008	0.172	0.231
10-Jan-2009	0.245	0.525
10-Feb-2009	0.226	0.325
10-Mar-2009	0.183	0.256
10-Apr-2009	0.217	0.439
10-May-2009	0.188	0.296
10-Jun-2009	0.216	0.346

Gretna STP Influent & Effluent Flow



Town of Gretna Sewage Treatment Plant
Outfall 001 Effluent pH

Date	Effluent pH (SU)	
	Minimum	Maximum
10-Sep-2004	6.2	7.5
10-Oct-2004	6.7	7.1
10-Nov-2004	6.2	7.5
10-Dec-2004	6.8	7.2
10-Jan-2005	6.4	7.2
10-Feb-2005	6.1	7.7
10-Mar-2005	7.1	7.6
10-Apr-2005	7.2	7.5
10-May-2005	6.6	7.5
10-Jun-2005	7.3	8.2
10-Jul-2005	7.1	8
10-Aug-2005	7.2	7.8
10-Sep-2005	6.9	7.4
10-Oct-2005	7.1	8
10-Nov-2005	7.4	7.4
10-Dec-2005	7.1	7.5
10-Jan-2006	7.3	7.7
10-Feb-2006	7.4	7.8
10-Mar-2006	7.6	7.8
10-Apr-2006	7.3	7.6
10-May-2006	7.3	7.5
10-Jun-2006	7.2	7.4
10-Jul-2006	7.2	7.4
10-Aug-2006	7.2	7.3
10-Sep-2006	7.1	7.7
10-Oct-2006	7.1	7.5
10-Nov-2006	7.4	7.6
10-Dec-2006	7.4	7.6
10-Jan-2007	7.4	7.6
10-Feb-2007	7.3	7.6
10-Mar-2007	7.2	7.6
10-Apr-2007	7.3	7.7
10-May-2007	7.1	7.4
10-Jun-2007	7	7.5
10-Jul-2007	7.1	7.2
10-Aug-2007	7.1	7.6
10-Sep-2007	7.2	7.6
10-Oct-2007	7.1	7.5
10-Nov-2007	6.9	7.4
10-Dec-2007	7	7.5
10-Jan-2008	7.2	7.5
10-Feb-2008	7.3	7.6
10-Mar-2008	7.1	7.5
10-Apr-2008	7.3	7.4
10-May-2008	7.1	7.3
10-Jun-2008	6.6	7.3
10-Jul-2008	6.9	7.5
10-Aug-2008	6.9	7.5
10-Sep-2008	7.3	7.5
10-Oct-2008	7.2	7.6
10-Nov-2008	7.6	7.9
10-Dec-2008	7.7	8.2
10-Jan-2009	7.7	8.2
10-Feb-2009	7.5	8.4
10-Mar-2009	7.5	7.9
10-Apr-2009	7.3	8.1
10-May-2009	7.4	7.8
10-Jun-2009	7	7.7

90th % =	**7.7**
10th % =	**6.97**

Reduced Monitoring analysis

= ≤ 6.5

Town of Gretna STP
Effluent BOD_5 Data

Date	BOD_5 (kg/Day)		BOD_5 (mg/l)	
	Monthly Avg.	Weekly Avg.	Monthly Avg.	Weekly Avg.
10-Aug-2004	1.4	1.6	8.7	10.3
10-Sep-2004	6.6	7.5	6.8	7.7
10-Oct-2004	6.7	7.9	6.1	6.4
10-Nov-2004	4.4	5.3	5.5	6.6
10-Dec-2004	4.6	4.9	7	8.9
10-Jan-2005	7.1	8.2	9.3	9.7
10-Feb-2005	5.3	6.1	7.8	12.6
10-Mar-2005	5.2	5.9	8.9	9.8
10-Apr-2005	6.9	8.1	9.3	9.8
10-May-2005	6.5	9.7	9.7	13.7
10-Jun-2005	6	7.2	11.3	16.3
10-Jul-2005	7.4	9.6	13.2	11.8
10-Aug-2005	4.2	5.6	5.2	4.6
10-Sep-2005	3.8	4.1	7	7.7
10-Oct-2005	5.9	8.1	11	14.8
10-Nov-2005	9.7	13.6	10.8	16
10-Dec-2005	13.6	13.6	24.1	24.1
10-Jan-2006	11.1	10.1	10.7	10.6
10-Feb-2006	10.6	17.4	14.4	19.9
10-Mar-2006	16.4	19.6	18.1	19.7
10-Apr-2006	14.4	19.2	29.7	31.6
10-May-2006	13.2	14.2	28.6	28.9
10-Jun-2006	6.6	7.9	16.8	22.5
10-Jul-2006	7.6	5.3	14.6	18.5
10-Aug-2006	6.2	5.3	10.9	13
10-Sep-2006	3.6	2.8	10.2	11
10-Oct-2006	4	6.1	4.9	5.4
10-Nov-2006	4	5.2	4.7	5.2
10-Dec-2006	4.1	6.1	4.7	5.2
10-Jan-2007	5.4	5.8	6	5.8
10-Feb-2007	5.5	7.4	5.6	8.6
10-Mar-2007	8.5	10.7	9.5	9.5
10-Apr-2007	11.1	12.6	14.8	16.9
10-May-2007	10.9	11.5	17.9	20.9
10-Jun-2007	17.5	19.9	6.9	10.3
10-Jul-2007	6.3	5.1	11.8	13.4
10-Aug-2007	3.3	3.6	9.7	10.5
10-Sep-2007	2.8	3.7	11.5	11.9
10-Oct-2007	3.2	4	11.1	16.7
10-Nov-2007	2.1	2.3	5.1	6.2
10-Dec-2007	2.2	2.3	5.3	4.9
10-Jan-2008	3	3.4	4.9	5.2
10-Feb-2008	6.3	8	8	9.6
10-Mar-2008	6.6	8.7	9.6	10.7
10-Apr-2008	6	6.5	8.8	10.4

Town of Gretna STP
Effluent BOD_5 Data

Date	BOD_5 (kg/Day)		BOD_5 (mg/l)	
	Monthly Avg.	Weekly Avg.	Monthly Avg.	Weekly Avg.
10-May-2008	8.2	15.2	10.2	6.8
10-Jun-2008	5.1	3.7	6.9	5.6
10-Jul-2008	3.5	5	6.9	9.2
10-Aug-2008	4.3	5.8	6.5	7.1
10-Sep-2008	6.5	5.6	11.3	13.5
10-Oct-2008	3.3	3.8	5.7	7.7
10-Nov-2008	3.1	3.6	5.7	8.9
10-Dec-2008	2.5	2.8	4.4	4.4
10-Jan-2009	3.8	4.7	4.3	4.1
10-Feb-2009	7.6	13.7	8.7	14.8
10-Mar-2009	5.8	7.7	8.2	9.6
10-Apr-2009	5.1	5.4	7.3	8.1
10-May-2009	9	7.9	13.2	13.8
10-Jun-2009	11.7	9.9	12.1	11

Town of Gretna STP
Effluent TSS Data

Date	TSS (kg/Day)		TSS (mg/l)	
	Monthly Avg.	Weekly Avg.	Monthly Avg.	Weekly Avg.
10-Aug-2004	1.3	1.3	7.6	8
10-Sep-2004	5.7	6.1	5.7	7
10-Oct-2004	5.1	6.2	4.7	5
10-Nov-2004	4.1	5.2	5	6.3
10-Dec-2004	5.4	6.2	8.2	9.3
10-Jan-2005	9.3	12.5	11.8	8.2
10-Feb-2005	5.3	7.3	6.8	7.7
10-Mar-2005	4.1	4.8	7.1	8
10-Apr-2005	7.6	8.3	10.6	10.3
10-May-2005	5.8	6.5	8.8	9
10-Jun-2005	5.8	8	10.2	11.7
10-Jul-2005	5.1	6.7	8.5	7.7
10-Aug-2005	4	5.7	4.9	5.7
10-Sep-2005	3	3.7	5.5	6
10-Oct-2005	4.3	6.3	7.9	11
10-Nov-2005	9.3	15.3	10.5	18
10-Dec-2005	13.8	13.8	24.3	24.3
10-Jan-2006	13.8	14	13.1	13.3
10-Feb-2006	12.3	22.9	16.4	26.3
10-Mar-2006	15.8	22.4	17.1	20
10-Apr-2006	15.1	23.7	29.4	32.3
10-May-2006	13.7	14.7	29.6	29.6
10-Jun-2006	4.5	5	10.9	13
10-Jul-2006	7.1	3.1	10.4	10.7
10-Aug-2006	7.1	4.4	10.8	10.3
10-Sep-2006	2.8	2.2	7.6	8.7
10-Oct-2006	3.9	5	4.8	6
10-Nov-2006	3.1	3.7	3.7	3.7
10-Dec-2006	2.4	3.3	3.3	6.7
10-Jan-2007	3.7	3	4.1	2.1
10-Feb-2007	3.2	4.4	3.2	3.7
10-Mar-2007	8.7	11.6	9.5	9.3
10-Apr-2007	11	11.9	15	16
10-May-2007	6.6	7.7	11	12.7
10-Jun-2007	10.6	11.7	4.3	5.8
10-Jul-2007	3.7	4.4	8.6	9
10-Aug-2007	2.9	3.5	8	9.7
10-Sep-2007	1.4	1.7	5.8	6.7
10-Oct-2007	3.4	4.1	11.1	14
10-Nov-2007	2	2.3	4.8	6
10-Dec-2007	1.6	1.8	3.9	4.3
10-Jan-2008	1.7	1.7	2.8	2.7
10-Feb-2008	2.4	3	3.1	3.7
10-Mar-2008	2.4	3.4	3.6	4
10-Apr-2008	3.8	4.3	5.7	7

Town of Gretna STP
Effluent TSS Data

Date	TSS (kg/Day)		TSS (mg/l)	
	Monthly Avg.	Weekly Avg.	Monthly Avg.	Weekly Avg.
10-May-2008	7.8	6.8	10	14
10-Jun-2008	4.5	4.4	6.4	6.7
10-Jul-2008	2.6	3.1	5.2	5.7
10-Aug-2008	4.4	5.5	6.3	6.5
10-Sep-2008	6.7	3.5	8.6	8.3
10-Oct-2008	2.3	2.7	4.4	6
10-Nov-2008	2.9	3.2	5.2	6.3
10-Dec-2008	2.8	3.6	4.7	5.3
10-Jan-2009	4.3	7.5	4.5	6.3
10-Feb-2009	5.6	8.4	6.6	9.3
10-Mar-2009	4.5	4.8	6.4	7.3
10-Apr-2009	4.9	5.1	6.9	6
10-May-2009	6.6	4.8	9.1	9
10-Jun-2009	9.6	8.8	10	9.3

Town of Gretna STP
Effluent DO

Date	Minimum DO (mg/l)
10-Aug-2004	7.1
10-Sep-2004	7
10-Oct-2004	7.1
10-Nov-2004	7.2
10-Dec-2004	8.2
10-Jan-2005	10.3
10-Feb-2005	9.7
10-Mar-2005	10.2
10-Apr-2005	9.3
10-May-2005	9.1
10-Jun-2005	7.4
10-Jul-2005	6.3
10-Aug-2005	6.6
10-Sep-2005	6.1
10-Oct-2005	6.9
10-Nov-2005	7.2
10-Dec-2005	8.6
10-Jan-2006	11.5
10-Feb-2006	10.4
10-Mar-2006	10
10-Apr-2006	9.1
10-May-2006	8.6
10-Jun-2006	8
10-Jul-2006	6.3
10-Aug-2006	6.4
10-Sep-2006	6.2
10-Oct-2006	7.4
10-Nov-2006	7.6
10-Dec-2006	8.2
10-Jan-2007	9.1
10-Feb-2007	9.5
10-Mar-2007	10.1
10-Apr-2007	8.4
10-May-2007	8.4
10-Jun-2007	7
10-Jul-2007	6.7
10-Aug-2007	6.9
10-Sep-2007	6
10-Oct-2007	7
10-Nov-2007	7.6
10-Dec-2007	8.5
10-Jan-2008	9.4
10-Feb-2008	9.7
10-Mar-2008	10.1
10-Apr-2008	9.1
10-May-2008	8.3
10-Jun-2008	6.9
10-Jul-2008	6.3
10-Aug-2008	6.7
10-Sep-2008	6.8
10-Oct-2008	6.7
10-Nov-2008	7.6
10-Dec-2008	10
10-Jan-2009	11.1
10-Feb-2009	12.6
10-Mar-2009	9.7
10-Apr-2009	9.5
10-May-2009	8.9
10-Jun-2009	6.2

Town of Gretna STP
Effluent Ammonia

Date	Ammonia (mg/l)	
	Average	Maximum
10-Nov-2004	2.6	2.6
10-Dec-2004	2.4	2.4
10-Jan-2005	3.1	3.1
10-Feb-2005	0.95	0.95
10-Mar-2005	0.9	0.9
10-Apr-2005	3.2	3.2
10-May-2005	3.1	3.1
10-Jun-2005	3	3
10-Jul-2005	0.4	0.4
10-Aug-2005	1.6	1.6
10-Sep-2005	1.5	1.5
10-Oct-2005	1.1	1.1
10-Nov-2005	1	1
10-Dec-2005	2.6	2.6
10-Jan-2006	0.8	0.8
10-Feb-2006	3.8	3.8
10-Mar-2006	1.6	1.6
10-Apr-2006	1.4	1.4
10-May-2006	0.9	0.9
10-Jun-2006	1	1
10-Jul-2006	0.14	0.14
10-Aug-2006	0.14	0.14
10-Sep-2006	0.14	0.14
10-Oct-2006	0.16	0.16
10-Nov-2006	0.15	0.15
10-Dec-2006	1.3	1.3
10-Jan-2007	3	3
10-Feb-2007	2.3	2.3
10-Mar-2007	2.3	2.3
10-Apr-2007	4	4
10-May-2007	0.4	0.4
10-Jun-2007	0.75	0.75
10-Jul-2007	0.3	0.3
10-Aug-2007	0.5	0.5
10-Sep-2007	0.12	0.12
10-Oct-2007	0.22	0.22
10-Nov-2007	1.3	1.3
10-Dec-2007	1.1	1.1
10-Jan-2008	1.8	1.8
10-Feb-2008	2.5	2.5
10-Mar-2008	3	3
10-Apr-2008	3.7	3.7
10-May-2008	3.3	3.3
10-Jun-2008	3	3

Date	Ammonia (mg/l)	
	Average	Maximum
10-Jul-2008	<0.1	<0.1
10-Aug-2008	0.4	0.4
10-Sep-2008	0.2	0.2
10-Oct-2008	0.46	0.46
10-Nov-2008	2.3	2.3
10-Dec-2008	3.9	3.9
10-Jan-2009	0.17	0.17
10-Feb-2009	8.6	8.6
10-Mar-2009	7	7
10-Apr-2009	2.9	2.9
10-May-2009	4.5	4.5

Permit Limit = 13.7 (average and max)

Town of Gretna STP
Minimum TRC at Discharge from Contact Tank

Date	TRC (ug/l) Average
10-Aug-2004	0.7
10-Sep-2004	0.6
10-Oct-2004	1.5
10-Nov-2004	1.5
10-Dec-2004	1.5
10-Jan-2005	1.5
10-Feb-2005	0.6
10-Mar-2005	1.5
10-Apr-2005	0.8
10-May-2005	1.1
10-Jun-2005	0.6
10-Jul-2005	0.7
10-Aug-2005	1
10-Sep-2005	1.5
10-Oct-2005	0.6
10-Nov-2005	0.6
10-Dec-2005	1.6
10-Jan-2006	1.5
10-Feb-2006	1.5
10-Mar-2006	1.5
10-Apr-2006	0.7
10-May-2006	0.9
10-Jun-2006	0.6
10-Jul-2006	1.5
10-Aug-2006	0.6
10-Sep-2006	1.5
10-Oct-2006	0.6
10-Nov-2006	1.5
10-Dec-2006	1.5
10-Jan-2007	1
10-Feb-2007	1.5
10-Mar-2007	0.8
10-Apr-2007	1.5
10-May-2007	1.5
10-Jun-2007	0.6
10-Jul-2007	1.5
10-Aug-2007	0.6
10-Sep-2007	0.7
10-Oct-2007	0.7
10-Nov-2007	1.5
10-Dec-2007	1
10-Jan-2008	1.5
10-Feb-2008	1.5
10-Mar-2008	1.5
10-Apr-2008	1.2
10-May-2008	0.6
10-Jun-2008	0.8
10-Jul-2008	1.3
10-Aug-2008	1
10-Sep-2008	1
10-Oct-2008	0.6
10-Nov-2008	0.8
10-Dec-2008	1.3
10-Jan-2009	1.5
10-Feb-2009	0.6
10-Mar-2009	1.5
10-Apr-2009	1
10-May-2009	1.1
10-Jun-2009	0.7

	DATE COLLECTED	WELL 1	WELL 2	WELL 3	WELL 4	WELL 5
GW Elev (ft)	9/15/2003	25	40	20	23	19
	9/3/2004	25	40	20	23	19
	4/11/2005	27	38	20.5	17	19
	11/8/2006	24	37	20	22	22
	6/7/2007	30	38	20	21	21
	4/22/2008	22	40	19	17	20
pH (SU)	3/19/2001	5.17	5.69	5.54	5.34	5.27
	9/12/2001	5.11 - Inv	6.77 - Inv	5.9 - Inv	5.19 - Inv	5.24 - Inv
	1/9/2002	5.14 - Inv	6.31 - Inv	5.88 - Inv	5.64 - Inv	5.33 - Inv
	6/17/2002	5.46	6.65	6.22	5.68	5.85
	9/30/2002	5.34	6.58	6.1	5.48	5.6
	3/19/2003	5.63	6.6	6.13	5.61	5.71
	6/5/2003	5.85 - Inv	6.68 - Inv	6.32 - Inv	5.88 - Inv	6.05 - Inv
	2/5/2004	5.17	6.43	5.81	5.35	5.25
	3/1/2004	4.24	5.91	4.8	4.47	4.56
	4/11/2005	NR	NR	NR	NR	NR
	11/8/2006	4.9	6.2	5.8	5.2	5.1
	6/7/2007	5	6.7	5.6	4.8	5.3
	4/22/2008	4.6	6.5	5.7	4.9	5
Specific Conductance (umhos/cm)	3/19/2001	46.7	104	135	114	140
	9/12/2001	47.4	103	117	98.4	143
	1/9/2002	53	107	119	145	148
	6/17/2002	61.2	102	147	107	179
	9/30/2002	65.8	101	126	121	173
	3/19/2003	28.7	104	149	96.6	185
	6/5/2003	29.3	98.6	124	93.7	183
	2/5/2004	22.9	110	121	123	182
	3/1/2004	21	95	104	86	165
	4/11/2005	48	110	104	149	205
	11/8/2006	92	108	133	179	175
	6/7/2007	79	101	127	151	189
	4/22/2008	100	103	166	164	196
NO3 (mg/l)	3/19/2001	0.59	<.05	<.05	2.34	1.53
Nitrate Nitrogen (mg/l)	4/11/2005	0.6	0.2	0.2	3.5	1.7
	11/8/2006	0.729	<0.1	<0.1	4.92	1.24
	6/7/2007	0.704	<0.1	<0.1	3.34	1.25
	4/22/2008	0.756	<0.1	<0.1	5.14	1.3
TOC (mg/l)	3/19/2001	3	2.4	1	<1	1.8
	1/9/2002	<2	<2	<2	<2	2.5
	6/17/2002	<2	2.6	<2	<2	<2
	3/19/2003	1.3	10.2	6.7	2	3.2
	6/5/2003	2.1	<1	1.7	<1	1.1
	2/5/2004	<1	<1	<1	<1	1.89
	3/1/2004	1.07	1.26	1.36	1.27	3.4
	4/11/2005	<1	2.1	1.2	<1	1.2
	11/8/2006	2.86	<1	2.74	6.14	1.19
	6/7/2007	<1	1.19	<1	2.65	1.06
	4/22/2008	2.76	<1	1.62	<1	1.4

OTHERS COLLECTED	DATE COLLECTED	WELL 1	WELL 2	WELL 3	WELL 4	WELL 5
Chlorides (mg/l)	3/19/2001	7.7	3.4	15	19.5	28.7
	9/12/2001	8.8	<5	11.8	17.7	29.4
	1/9/2002	8.6	<5	11.4	23.2	29
	6/17/2002	10	<5	19	17.9	37.2
	9/30/2002	10.8	<5	10.7	23.6	41.7
	3/19/2003	4.48	2.97	23.08	22.98	36.72
	6/5/2003	3.8	1.73	14.78	15.54	40.46
	2/5/2004	2	1	18	26	47
	3/1/2004	4	3	21	17	41
	4/11/2005	7	2	10	23	41
	11/8/2006	14.1	1.49	14.9	29.2	37.5
	6/7/2007	13.5	3.08	17.1	26.5	41.5
	4/22/2008	16.1	1.59	21.7	31.3	43.5
T. Coliform (MPN/100 ml)	3/1/2004	ND	2	ND	ND	ND
NH3 (mg/l)	3/19/2001	<.04	<.04	<.04	<.04	<.04
	9/12/2001	<.04	0.11	<.04	<.04	<.04
	1/9/2002	<.04	0.07	<.04	<.04	<.04
	6/17/2002	0.05	0.56	0.05	<.04	<.04
	9/30/2002	0.04	1.25	<.04	<.04	0.04
	3/19/2003	<.04	0.2	<.04	<.04	<.04
	6/5/2003	0.08	<.04	0.05	<.04	<.04
	2/5/2004	<.1	<.1	<.1	<.1	<.1
	3/1/2004	<.1	<.1	<.1	<.1	<.1
	4/11/2005	<.1	<.1	<.1	<.1	<.1
	6/7/2007	<.1	<.1	<.1	<.1	<.1
	4/22/2008	0.16	0.25	0.11	0.11	<.1
Ortho-P (mg/l)	3/19/2001	0.02	0.02	<.02	0.02	0.02
	9/12/2001	<.02	0.6	<.02	0.03	<.02
	9/30/2002	0.03	3.15	0.03	0.03	0.03
Alkalinity (mg/l)	3/19/2001	5.97	37.8	24.3	12.4	12.6
	9/12/2001	5.75	37.8	21.8	6.31	8.9
	1/9/2002	6.95	38.6	18.3	13.3	8.7
	6/17/2002	5.13	40.6	18.8	6.91	12
	9/30/2002	5.73	39.4	23.6	5.81	11.2
	3/19/2003	4.35	42.3	20.3	7.81	12.2
	6/5/2003	4.21	31.3	17.2	8.8	13.3
	2/5/2004	<10	40	17	<10	15
	3/1/2004	<10	41	14	<10	15
TKN (mg/l)	3/19/2001	0.2	<.1	0.3	0.2	0.2
T. Phosphorus (mg/l)	3/19/2001	2.9	2.1	0.1	0.1	0.3
	3/19/2003	<.1	<.1	0.13	<.1	<.1
	2/5/2004	0.08	1.1	<.05	<.05	<.05
	3/1/2004	0.275	<.01	0.046	<.01	0.027
NR = Not Reported						

	DATE COLLECTED	WELL 1	WELL 2	WELL 3	WELL 4	WELL 5
Nitrites (mg/l)	1/9/2002	<.05	<.05	<.05	0.05	<.05
	6/17/2002	0.07	0.06	<.05	<.05	0.06
	3/19/2003	<.05	<.05	<.05	<.05	<.05
	6/5/2003	<.01	<.01	<.01	<.01	<.01
	2/5/2004	<.01	<.01	<.01	<.01	<.01
	3/1/2004	<.01	<.01	<.01	<.01	<.01
Acidity (mg/l)	1/9/2002	91.4	0	44	53.4	82
	6/17/2002	0.5	17	0.5	0.3	0.5
	3/19/2003	7.5	32.5	27.5	34.5	55
	6/5/2003	39	12.6	25.4	73.9	126
	2/5/2004	24	12	16	20	50
	3/1/2004	23	17	46	48	73
Fecal Coliform MPN/100 ml)	6/17/2002	ND	ND	ND	ND	ND
	9/30/2002	ND	ND	ND	ND	ND
	3/19/2003	ND	ND	ND	ND	ND
	9/15/2003	ND	ND	ND	ND	ND
	12/22/2003	ND	ND	ND	ND	ND
T. Phosphate (mg/l)	6/17/2002	<.1	<.1	<.1	<.1	<.1
	6/5/2003	0.1	0.2	0.4	0.1	<.1
T. Hardness (mg/l)	9/12/2001	11.1	32.9	26.2	18.1	35
	9/30/2002	36	45	42	35	65
As (ug/l)	9/17/2001	<2	<2	<2	<2	<2
	9/30/2002	<5	<5	<5	<5	<5
	9/15/2003	0.57	0.28	2.1	0.13	0.35
Ba (ug/l)	9/17/2001	<200	<200	<200	<200	<200
	9/30/2002	86.1	52.3	25.1	77.1	157
	9/15/2003	92.7	12.5	29	57.2	191
Cd (ug/l)	9/17/2001	<2	<2	<2	<2	<2
	9/30/2002	<5	<5	<5	<5	<5
	9/15/2003	0.84	1	0.92	0.7	0.39
Cr (ug/l)	9/17/2001	<10	<10	<10	<10	<10
	9/30/2002	<10	<10	<10	<10	<10
	9/15/2003	16.9	2.4	1.5	2	3.2
Fluoride (mg/l)	9/12/2001	<.2	<.2	<.2	<.2	<.2
	9/30/2002	1.12	<.2	<.2	<.2	<.2
Pb (ug/l)	9/17/2001	<2	3	<2	<2	<2
	9/30/2002	<5	5	<5	<5	<5
	9/15/2003	7.7	4.8	1	1.3	0.8
Hg (ug/l)	9/17/2001	0.7	<.2	<.2	<.2	0.9
	9/30/2002	<.3	<.3	<.3	<.3	0.5
	9/15/2003	0.19	0.05	0.05	0.05	0.37

OTHERS COLLECTED	DATE COLLECTED	WELL 1	WELL 2	WELL 3	WELL 4	WELL 5
Se (ug/l)	9/17/2001	<10	<10	<10	<10	<10
	9/30/2002	<10	5	<5	<5	<5
	9/15/2003	0.45	0.07	0.05	0.11	0.29
Ag (ug/l)	9/30/2002	<5	<5	<5	<5	<5
	9/15/2003	0.05	0.01	0.01	0.01	0.02
Cu (ug/l)	9/17/2001	<200	<200	<200	<200	<200
	9/30/2002	<10	<10	<10	<10	<10
	9/15/2003	1.57	3.5	2.6	2.9	0.9
Fe (ug/l)	9/17/2001	1800	25400	1700	490	690
	9/30/2002	4800	41500	1800	270	130
	9/15/2003	13000	24700	16600	526	557
Mn (ug/l)	9/17/2001	130	150	170	100	91
	9/30/2002	261	308	72.1	49.7	83.6
	9/15/2003	339	163	49.4	309	42.4
Sodium (mg/l)	9/17/2001	<5	5.6	8.28	8.94	9.13
	9/30/2002	4.37	6.67	8.57	11.1	10.16
	9/15/2003	1.14	3.87	5.72	8.45	11.6
SO4 (mg/l)	9/12/2001	<5	11.2	13.7	<5	<5
	9/30/2002	<5	10.6	15.1	<5	<5
Zn (ug/l)	9/17/2001	<200	<200	<200	<200	<200
	9/30/2002	10.6	14.1	<10	<10	<10
	9/15/2003	29.8	17.5	9	10.3	6.3
TDS (mg/l)	9/12/2001	32	97	79	66	97
	9/30/2002	39	94	83	73	108
Al (ug/l)	9/17/2001	1300	520	<200	380	380
Sb (ug/l)	9/17/2001	<2	<2	<2	<2	<2
Be (ug/l)	9/17/2001	<2	<2	<2	<2	<2
Ni (ug/l)	9/17/2001	<10	<10	<10	<10	<10
Thallium (ug/l)	9/17/2001	<2	<2	<2	<2	<2
Color - PCU	9/12/2001	5	148	6	<5	<5
	9/30/2002	<5	45.7	11.6	9.1	<5
Turbidity - NTU	9/12/2001	520	1290	41	55	382
	9/30/2002	1105	3890	64.2	48.2	261
Silica (mg/l)	9/12/2001	7.8	33	19.8	9.7	11.8
	9/30/2002	8.4	35.7	21.5	10.5	13.1
Sulfide (mg/l)	9/12/2001	<.03	<.03	<.03	<.03	<.03
	9/30/2002	<.03	<.03	<.03	<.03	<.03

ATTACHMENT 8

SPECIAL CONDITIONS RATIONALE

VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS RATIONALE

Name of Condition:

B. ADDITIONAL TOTAL RESIDUAL CHLORINE (TRC) LIMITATIONS AND MONITORING REQUIREMENTS

Rationale: The State Water Quality Standards, 9 VAC 25-260-160 (Fecal coliform bacteria; shellfish waters) and 9 VAC 25-260-170 (Bacteria; other waters) address bacterial standards in surface waters and sewage discharges. These internal limitations and monitoring requirements are designed to achieve those water quality standards. In addition, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) in order to achieve compliance with the permit (includes laboratory controls and QA/QC). This requirement will also insure both continued proper operation of the chlorination facilities and maintenance of a minimum level of chlorine in order to achieve adequate disinfection.

C. SCHEDULE OF COMPLIANCE

Rationale: In accordance with the VPDES Permit Regulation, 9 VAC 25-31-250, and 40 CFR 122.47, the permit may, when appropriate, specify a schedule of compliance leading to compliance with the Clean Water Act, laws and regulations.

D. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1. Permit Reopeners

a. Sludge Reopener

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-220 C., and 40 CFR 122.44(c)(4), which note that all permits for domestic sewage treatment plants (including sludge-only facilities) include any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the Clean Water Act.

b. Total Maximum Daily Load (TMDL)] Reopener

Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired in order that they achieve the applicable water quality standards. This condition allows for the permit to be either modified or, alternatively, revoked and reissued to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(l) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other waste load allocation prepared under section 303 of the Act.

2. Licensed Wastewater Operator Requirement

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 D., requires the permittee to employ or contract at least one wastewater works operator who holds a current wastewater license for the permitted facility. The Code of Virginia 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. In addition, the Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.), recommends a manning and classification schedule for domestic wastewater treatment plant operators, based on plant capacity and specific treatment types.

3. Reliability Class

Rationale: The Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.) specify reliability classes for all domestic sewage facilities.

4. Certificate to Construct (CTC) and Certificate to Operate (CTO) Requirements

Rationale: The Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.) specify the requirement for the review and approval of plans and specifications (CTC) and the subsequent issuance of a CTO prior to operating any domestic sewage facilities.

5. Operations & Maintenance (O&M) Manual Requirements

Rationale: Required by the State Water Control Law, Section 62.1-44.19 and the VPDES Permit Regulation, 9 VAC 25-31-190 E. The State Water Control Law, Section 62.1-44.21, allows requests for any information necessary to determine the effect of the discharge on state waters. Section 401 of the Clean Water Act requires the permittee to provide opportunity for the state to review the proposed operations of the facility. In addition, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) in order to achieve compliance with the permit (includes laboratory controls and QA/QC).

6. 95% Design Capacity Notification

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-200 B.2., for all POTWs and PVOTWs in order to insure continued compliance with the terms of the permit.

7. Compliance Reporting Under Part I.A. and I.B.

Rationale: Authorized by the VPDES Permit Regulation, 9 VAC 25-31-190 J.4. and 220 I. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

8. Materials Handling and Storage

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-50 A., prohibits the discharge of any wastes into State waters unless authorized by permit. The State Water Control Law, Sec. 62.1-44.16 and 17 authorizes the Board to regulate the discharge of industrial or other wastes. Section 301 of the Clean Water Act prohibits the discharge of any pollutant unless it complies with specific sections of the Act.

9. Ground Water Monitoring Plan

Rationale: The State Water Control Law, Section 62.1-44.21, authorizes the Board to request information needed to determine the discharge's impact on State waters. Ground water monitoring for parameters of concern will indicate whether the system integrity is being maintained and will determine if activities at the site are resulting in violations of the State Water Control Board's Ground Water Standards.

10. Indirect Dischargers

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-200 B.1 and 40 CFR 122.42(b), for POTWs and PVOTWs which receive waste from someone other than the owner of the treatment works. DEQ must be notified of the introduction of new pollutants to the treatment system, from an indirect discharger, whether as increased volume or a change in the character of the pollutants.

11. Sludge Use and Disposal

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-100 P., 220 B.2. and 420 through 720, and 40 CFR 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal. The VPDES sewage sludge permit application form and its attachments constitute the sludge management plan and will be considered for approval with the VPDES permit. Technical requirements may be derived from the Department of Health's Biosolids Use Regulation, 12 VAC 5-585-10 et seq. and sections 330 and 340 of that regulation specify the general purpose and control requirements for an O&M manual in order to facilitate proper O&M of the facilities to meet the requirements of the regulation.

12. Minimum Freeboard

Rationale: Minimize the discharge of untreated wastewater to the groundwater or surface waters.

13. Terrace Hydraulic Loading

Rationale: This condition is continued from the previous permit. Individual terrace loading is not to exceed the design criteria without prior permit approval from DEQ. The system was designed for monitoring of loading to individual terraces and the system must be operated and maintained as designed. Hydraulic loading includes rainfall.

14. Annual Terrace Report

Rationale: This condition is continued from the previous permit and is intended to allow DEQ staff to evaluate plant performance.

15. Facility Closure Plan

Rationale: This condition is required in the event that some or all of the operations at the facility cease. The system (or part of the system) must be properly closed out in accordance with regulatory requirements.

16. Permit Application Requirement

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-100 D. and 40 CFR 122.21 (d)(1) require a new application at least 180 days prior to expiration of the existing permit. In addition, the VPDES Permit Regulation, 9 VAC 25-31-100 E.1. and 40 CFR 122.21 (e)(1) note that a permit shall not be issued before receiving a complete application.

E. PRETREATMENT

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-10 et seq., Part VII, and 40 CFR Part 403 establish the legal requirements for State, local government and industry to implement National Pretreatment Standards. The Pretreatment Standards are implemented to prevent POTW plant pass through, interference, violation of water quality standards or contamination of sewage sludge. The regulation requires POTWs with a total design flow greater than 5 MGD with significant or categorical industrial input to establish a Pretreatment Program. The regulation also may apply to POTWs with design flows less than 5 MGD if circumstances warrant control of industrial discharges.

1. SIGNIFICANT DISCHARGE WASTE SURVEY

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-10 et seq., Part VII, and 40 CFR Part 403 establish the legal requirements for State, local government and industry to implement National Pretreatment Standards. The Pretreatment Standards are implemented to prevent POTW plant pass

through, interference, violation of water quality standards or contamination of sewage sludge. The regulation requires POTWs with a total design flow greater than 5 MGD with significant or categorical industrial input to establish a Pretreatment Program. The regulation also may apply to POTWs with design flows less than 5 MGD if circumstances warrant control of industrial discharges.

This survey is designed to determine if there are any significant or categorical industrial users discharging into the POTW' collection system. Based on the survey results, a determination can be made as to the need for establishing a pretreatment program at the POTW.

Part II CONDITIONS APPLICABLE TO ALL VPDES PERMITS

The VPDES Permit Regulation, 9 VAC 25-31-190, and 40 CFR 122, require all VPDES permits to contain or specifically cite the conditions listed.

ATTACHMENT 9

RECEIVING WATERS INFO./
TIER DETERMINATION/STORET DATA

Planning Statement for VPDES Permit Application Processing DEQ-SCRO

VPDES	OwnerName	Facility	County
VA0063843	Town of Gretna	Gretna STP	Pittsylvania

Outfall #: 001

River Basin: Roanoke River

Receiving Stream: Georges Creek

Subbasin: Roanoke River

Watershed Code: L68R

River Mile: 9.92

	MGD		MGD
1Q10	0.47	**HF 1Q10**	1.23
7Q10	0.65	**HF7Q10**	1.46
30Q5	1.14	**HF30Q10**	2.0
30Q10	0.92	**HM**	2.7

Modeling Notes

cBOD5 - 20 mg/L
TKN - 16 mg/L
DO - 6 mg/L
Model Date - 5/19/04

WQMP Name 9 VAC 25-720-80

Statement There is no allocation for the facility included in the current plan.

TMDL ID None

Impairment Cause

TMDL Due Date

Completed TMDL Information

Banister River Watershed TMDL - WLA = 3.06E+12

TMDL Approval Dates EPA - 11/4/07 & SWCB - 7/31/08

Amanda B Gray

Amanda B. Gray, Water Planning Engineer

10·23·08

Date

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
Town of Gretna STP – VA#0063843

TO: Kirk Batsel

FROM: Amanda Gray

DATE: October 23, 2008

COPIES: File

This memo supersedes my May 17, 2004 memo concerning the subject VPDES permit. The Town of Gretna discharges to George's Creek near Gretna, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit. The VDEQ has operated a continuous record gage on George's Creek near Gretna, VA (#02076500) since 1949. The gage is located at the Route 40 bridge downstream of the discharge point. The flow frequencies for the gage and discharge point were determined by drainage area proportions and do not address any other withdrawals, discharges, or springs lying upstream.

George's Creek near Gretna, VA (#02076500):
Drainage Area: 9.24 mi^2

1Q10 = 1.6 cfs	High Flow 1Q10 = 3.4 cfs
7Q10 = 2.0 cfs	High Flow 7Q10 = 3.9 cfs
30Q5 = 3.1 cfs	High Flow 30Q10 = 5.1 cfs
30Q10 = 2.6 cfs	Harmonic Mean = 6.6 cfs

The high flows are January through May. During the high flow period, the Town of Gretna's maximum withdrawal occurred during February 2000 and equaled 0.420 cfs. During the low flow period, the Town's maximum withdrawal occurred during August 2007 and equaled 0.36 cfs. The withdrawal volumes have been subtracted from their respective flow frequencies.

George's Creek at discharge point:
Drainage Area: 6.34 mi^2
1Q10 = 1.09 – 0.36 = 0.73 cfs (0.47 MGD)
7Q10 = 1.37 – 0.36 = 1.01 cfs (0.65 MGD)
30Q5 = 2.13 – 0.36 = 1.77 cfs (1.14 MGD)
30Q10 = 1.78 – 0.36 = 1.42 cfs (0.92 MGD)
High Flow 1Q10 = 2.33 – 0.42 = 1.91 cfs (1.23MGD)
High Flow 7Q10 = 2.68 – 0.42 = 2.26 cfs (1.46 MGD)
High Flow 30Q10 = 3.50 – 0.42 = 3.08 cfs (2.0 MGD)
Harmonic Mean = 4.53 – 0.36 = 4.17 cfs (2.7 MGD)

If there are any questions concerning this analysis, please let me know.

GRETNA STP

Historical Planning Statements + Basis for Modeling the Subject Discharge

?

Historical Models

Planning Statement for VPDES Permit Application Processing DEQ-SCRO

VPDES	OwnerName	Facility	County
VA0063843	Town of Gretna	Gretna STP	Pittsylvania

River Basin: Roanoke River

Receiving Stream: Georges Creek

Subbasin: Roanoke River

Watershed Code: L68R

River Mile: 9.92

	MGD		MGD
1Q10	0.47	**HF 1Q10**	1.23
30Q5	1.14	**HF7Q10**	1.46
7Q10	0.65	**HF30Q10**	2.0
30Q10	0.92	**HM**	2.7

Modeling Notes

cBOD5 - 20 mg/L
TKN - 16 mg/L
DO - 6 mg/L

WQMP Name 9 VAC 25-720-80

Statement Limited to 100 lbs/day BOD5

TMDL ID None

Impairment Cause

TMDL Due Date

Amanda B McKee 5/24/04

Amanda B. McKee, Water Planning Engineer **Date**

"Model Run For U:\Planning\Planning\Modeling\VA0063843\VA0063843.mod O
n 5/19/04 7:35:40 AM"

"Model is for GEORGES CREEK."
"Model starts at the GRETNA STP discharge."

"Background Data"

"7Q10",	"cBOD5",	"TKN",	"DO",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
.658,	2,	0,	6.976,	28

"Discharge/Tributary Input Data for Segment 1"

"Flow",	"cBOD5",	"TKN",	"DO",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
.35,	20,	16,	,6,	28

"Hydraulic Information for Segment 1"

"Length",	"Width",	"Depth",	"Velocity"
"(mi)",	"(ft)",	"(ft)",	"(ft/sec)"
.59,	2,	.642,	1.215

"Initial Mix Values for Segment 1"

"Flow",	"DO",	"cBOD",	"nBOD",	"DOSat",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
1.008,	6.637,	20.625,	19.545,	7.752,	28

"Rate Constants for Segment 1. - (All units Per Day)"

"k1",	"k1@T",	"k2",	"k2@T",	"kn",	"kn@T",	"BD",	"BD@T"
1.2,	1.733,	10.169,	12.294,	.4,	.74,	0,	0

"Output for Segment 1"
"Segment starts at GRETNA STP"

"Total",	"Segm."			
"Dist.",	"Dist.",	"DO",	"cBOD",	"nBOD"
"(mi)",	"(mi)",	"(mg/l)",	"(mg/l)",	"(mg/l)"
0,	0,	6.637,	20.625,	19.545
.1,	.1,	6.46,	20.446,	19.472
.2,	.2,	6.295,	20.269,	19.4
.3,	.3,	6.142,	20.093,	19.328
.4,	.4,	6,	19.919,	19.256
.5,	.5,	5.868,	19.746,	19.184
.59,	.59,	5.757,	19.592,	19.12

"Discharge/Tributary Input Data for Segment 2"

"Flow",	"cBOD5",	"TKN",	"DO",	"Temp"

```
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
0,       2,        0,        ,6.978,   28

"Incremental Flow Input Data for Segment 2"
"Flow",  "cBOD5",  "TKN",    "DO",     "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.142,    2,        0,        ,6.991,   28

"Hydraulic Information for Segment 2"
"Length","Width",  "Depth",  "Velocity"
"(mi)",  "(ft)",   "(ft)",   "(ft/sec)"
4,       3.5,      .253,     1.387

"Initial Mix Values for Segment 2"
"Flow",  "DO",     "cBOD",   "nBOD",   "DOSat",  "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
1.15,    5.909,    17.79,    16.759,   7.767,    28

"Rate Constants for Segment 2. - (All units Per Day)"
"k1",  "k1@T", "k2",   "k2@T", "kn",   "kn@T", "BD",   "BD@T"
1.5,   2.166,  15,     18.134, .65,    1.203,  0,      0

"Output for Segment 2"
"Segment starts at UNNAMED TRIBUTARY TO GEORGES CREEK"
"Total", "Segm."
"Dist.", "Dist.",  "DO",     "cBOD",   "nBOD"
"(mi)",  "(mi)",   "(mg/l)", "(mg/l)", "(mg/l)"
.59,     0,        5.909,    17.79,    16.759
.69,     .1,       5.804,    17.621,   16.67
.79,     .2,       5.709,    17.454,   16.582
.89,     .3,       5.623,    17.288,   16.494
.99,     .4,       5.546,    17.124,   16.407
1.09,    .5,       5.477,    16.961,   16.32
1.19,    .6,       5.415,    16.8,     16.234
1.29,    .7,       5.36,     16.64,    16.148
1.39,    .8,       5.311,    16.482,   16.063
1.49,    .9,       5.268,    16.325,   15.978
1.59,    1,        5.23,     16.17,    15.894
1.69,    1.1,      5.196,    16.016,   15.81
1.79,    1.2,      5.167,    15.864,   15.726
1.89,    1.3,      5.142,    15.713,   15.643
1.99,    1.4,      5.121,    15.564,   15.56
2.09,    1.5,      5.103,    15.416,   15.478
2.19,    1.6,      5.088,    15.27,    15.396
2.29,    1.7,      5.076,    15.125,   15.315
2.39,    1.8,      5.067,    14.981,   15.234
2.49,    1.9,      5.06,     14.839,   15.153
2.59,    2,        5.055,    14.698,   15.073
```

2.69,	2.1,	5.053,	14.558,	14.993
2.79,	2.2,	5.052,	14.42,	14.914
2.89,	2.3,	5.053,	14.283,	14.835
2.99,	2.4,	5.056,	14.147,	14.757
3.09,	2.5,	5.06,	14.013,	14.679
3.19,	2.6,	5.065,	13.88,	14.601
3.29,	2.7,	5.072,	13.748,	14.524
3.39,	2.8,	5.08,	13.617,	14.447
3.49,	2.9,	5.089,	13.488,	14.371
3.59,	3,	5.099,	13.36,	14.295
3.69,	3.1,	5.109,	13.233,	14.219
3.79,	3.2,	5.12,	13.107,	14.144
3.89,	3.3,	5.132,	12.983,	14.069
3.99,	3.4,	5.144,	12.86,	13.995
4.09,	3.5,	5.157,	12.738,	13.921
4.19,	3.6,	5.17,	12.617,	13.847
4.29,	3.7,	5.184,	12.497,	13.774
4.39,	3.8,	5.198,	12.378,	13.701
4.49,	3.9,	5.213,	12.26,	13.629
4.59,	4,	5.228,	12.144,	13.557

"END OF FILE"

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Stream Sanitation Analysis – Georges Creek in Pittsylvania County
Gretna STP #VA0063843

TO: Kirk Batsel

FROM: Amanda McKee ABMcKee

VIA: Kyle Winter KW 5/20/04

DATE: May 19, 2004

COPIES: File

A complete request for a stream sanitation analysis for Gretna STP was received on April 5, 2004. A memo was issued on April 8, 2004 for the results of the model based on an incorrect 7Q10 flow determination. The flow has since been corrected and documented in a memo to Kirk Batsel dated May 17, 2004. The model was re-run based on the updated 7Q10 and the results are provided below. The discharge is currently permitted (VA0063843), but the stream sanitation analysis was requested because the permittee proposes to modify the design flow from 0.23 MGD to 0.35 MGD.

A site visit was performed on April 7, 2004, stream and effluent characteristics were observed. The upstream and downstream elevations of the first segment are 725 ft. and 715 ft. respectively. An unnamed tributary enters at the start of the second segment where the upstream and downstream elevations are 715 ft. and 615 ft. respectively. The receiving stream is considered to be a Tier 1 water and therefore is not subject to antidegradation requirements.

The receiving stream was modeled using DEQ's Regional 4.0 model. The model was initially run using the technology based effluent limits of 25 mg/L $cBOD_5$, 20 mg/L TKN and 5 mg/L minimum DO, which correlates to the existing permit limits. The water quality standards were violated in this scenario with the proposed expansion. The stream was then modeled for expansion using the default flow and temperature and the following limits: $cBOD_5$ of 20 mg/L, a TKN value of 16 mg/L and a minimum dissolved oxygen limit of 6 mg/L. The water quality standard for DO was maintained in this case, therefore the proposed BOD and DO limits are appropriate.

If you have any questions or need any additional information, please do not hesitate to contact me.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
Town of Gretna STP – VA#0063843

TO: Kirk Batsel

FROM: Amanda McKee

VIA: Kyle Winter

DATE: May 17, 2004

COPIES: File

This memo supersedes the November 14, 2003 memo concerning the subject VPDES permit. The previous memo did not account for the withdrawal that is made upstream of the Town of Gretna's STP discharge. The discharge from the Gretna WTP is also upstream of the STP discharge, but is small and intermittent and considered insignificant in this determination.

The Town of Gretna discharges to George's Creek near Gretna, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The VDEQ has operated a continuous record gage on George's Creek near Gretna, VA (#02076500) since 1949. The gage is located at the Route 40 bridge downstream of the discharge point. The flow frequencies for the gage and discharge point were determined by drainage area proportions and do not address any other withdrawals, discharges, or springs lying upstream.

George's Creek near Gretna, VA (#02076500):

Drainage Area: 9.24 mi^2

1Q10 = 1.6 cfs	High Flow 1Q10 = 3.4 cfs
7Q10 = 2.0 cfs	High Flow 7Q10 = 3.9 cfs
30Q5 = 3.1 cfs	High Flow 30Q10 = 5.1 cfs
30Q10 = 2.6 cfs	Harmonic Mean = 6.6 cfs

The high flows are January through May. During the high flow period, the Town of Gretna's maximum withdrawal occurred during February 2000 and equaled 0.420 cfs. During the low flow period, the Town's maximum withdrawal occurred during June 1999 and equaled 0.362 cfs. The withdrawal volumes have been subtracted from their respective flow frequencies.

George's Creek at discharge point:

Drainage Area: 6.34 mi^2

1Q10 = 1.09 – 0.362 = 0.728 cfs (0.47 MGD)

7Q10 = 1.37 – 0.362 = 1.00 cfs (0.65 MGD)

30Q5 = 2.13 – 0.362 = 1.77 cfs (1.14 MGD)

30Q10 = 1.78 – 0.362 = 1.42 cfs (0.92 MGD)

High Flow 1Q10 = 2.33 – 0.420 = 1.91 cfs (1.23MGD)

High Flow 7Q10 = 2.68 – 0.420 = 2.26 cfs (1.46 MGD)

High Flow 30Q10 = 3.50 – 0.420 = 3.08 cfs (2.0 MGD)

Harmonic Mean = 4.53 – 0.362 = 4.17 cfs (2.7 MGD)

The high flow months are January through May. If there are any questions concerning this analysis, please let me know.

Planning Statement for VPDES Permit Application Processing DEQ-SCRO

VPDES	OwnerName	Facility	County
VA0063843	Town of Gretna	Gretna STP	Pittsylvania

River Basin: Roanoke River

Receiving Stream: Georges Creek

Subbasin: Roanoke River

Watershed Code: L68R

River Mile: 9.92

	MGD		MGD
1Q10	0.70	**HF 1Q10**	1.51
30Q5	1.38	**HF7Q10**	1.73
7Q10	0.89	**HF30Q10**	2.3
30Q10	1.15	**HM**	2.93

Modelling Notes

Technology Based Limits

WQMP Name 9 VAC 25-720-80

Statement Limited to 100 lbs/day BOD5

TMDL ID None

Impairment Cause

TMDL Due Date

Amanda B. McKee

Amanda B. McKee, Water Planning Engineer

4/8/04

Date

MEMORANDUM
Department of Environmental Quality
South Central Regional Office

7705 Timberlake Road **Lynchburg, Virginia 24502**

Subject: Planning Service Requests for VPDES Permit Application Processing

To: Amanda McKee, Water Planning Engineer AMcKee

From: Kim Batsel, KB

Date: Dec 16, 2003

Copies: Facility Permit Processing File, Planning File

The request for information from the planning section is to be made at the time of sending the reissuance reminder letter to the facility or, for an issuance or modification, at the time of application/modification request receipt.

PERMIT ACTION: Issuance (Reissuance) Modification (circle one)

PERMIT TYPE: Major (Minor) (Municipal) Industrial Storm Water TMP TRE (circle all that apply)

FACILITY NAME: Gretna STP Current Flow = 0.230 MGD

VPDES PERMIT NO. VA0063843 EXPIRATION DATE: Sept 30, 2004

PERMIT WRITERS: ATTACH THE FOLLOWING MAPS AND INFORMATION

- Topo map with facility location and outfall locations clearly marked (include any proposed outfalls)
- Site diagram for facilities with multiple outfalls
- Description or map showing effluent flow path if not apparent on topo map
- The outfall numbers, latitude, longitude, receiving stream and topo name in the table below (use an additional sheet if there are more outfalls)
- ___ Check if a new FLOW FREQUENCY DETERMINATION is being requested. **If checked, provide the previous flow frequency determination memo**
- * ✓ Check if a new or revised WATER QUALITY MODEL is being requested. **If checked, provide the facility flow and the previous limitations page** See attached
- ___ Check if tiered limits are needed.
- March 23, 2004 Date information needed.

* Plant may expand to 0.350 MGD if so a model will need to be conducted on this flow also.

Outfall No.	Latitude	Longitude	Receiving Stream	River Mile	Waterbody ID	Waterbody Name	Topo Name
001	36° 56' 49.7"	-79° 20' 34.5"	Georges Cr.	9.92	VAC-L68R	Whitethorn Cr.	Gretna

* Request for upgrade - addendum to application received 4/5/04. KB

PLANNING:

- Verify information in table above and provide river mile, waterbody ID and waterbody name
- Updated flow frequency determination

1Q10 1.09 cfs (0.7MGD) 7Q10 1.37 cfs (0.89MGD) 30Q10 = 1.78 cfs (1.15MGD)

30Q5 2.13 cfs (1.38MGD) HM 4.53 cfs (2.93MGD)

High Flow 1Q10 2.33 cfs (1.5MGD) High Flow 7Q10 2.68 cfs (1.73MGD)

HF 30Q10 = 3.5 cfs (2.3MGD)

- Water Quality Management Plan Information:

a. Is the facility mentioned in a WQ Management Plan?

X Yes

___ No, but will be included when the plan is updated.

b. Are limits contained in the WQ Management Plan?

X Yes (If so, attach a copy of the plan limits)

___ No

- 303(d) Listed Segment(s)

a. Does the facility discharge to a 303(d) listed segment? ___ Yes X No

b. If yes, for what is the segment listed? _____ (Provide a copy of the listing)

c. TMDL due date _____

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Stream Sanitation Analysis – Georges Creek in Pittsylvania County
Gretna STP #VA0063843

TO: Kirk Batsel

FROM: Amanda McKee

VIA: Kyle Winter

DATE: April 8, 2004

COPIES: File

A complete request for a stream sanitation analysis for Gretna STP was received on April 5, 2004. The discharge is currently permitted (VA0063843), but the stream sanitation analysis was requested because the permittee proposes to modify the design flow from 0.23 MGD to 0.35 MGD.

A site visit was performed on April 7, 2004, stream and effluent characteristics were observed. The upstream and downstream elevations of the first segment are 725 ft. and 715 ft. respectively. An unnamed tributary enters at the start of the second segment where the upstream and downstream elevations are 715 ft. and 615 ft. respectively. The receiving stream is considered to be a Tier 1 water and therefore is not subject to antidegradation requirements.

The receiving stream was modeled using DEQ's Regional 4.0 model. The model predicted that the increased discharge will have no significant impact on Georges Creek under 7Q10 conditions if the discharge is subject to technology based effluent limits for biochemical oxygen demand.

If you have any questions or need any additional information, please do not hesitate to contact me.

"Model Run For U:\Planning\Planning\Modeling\VA0063843\VA0063843.mod O
n 4/12/04 10:40:23 AM"

"Model is for GEORGES CREEK."
"Model starts at the GRETNA STP discharge."

"Background Data"

"7Q10",	"cBOD5",	"TKN",	"DO",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
1.3723,	2,	0,	6.976,	28

"Discharge/Tributary Input Data for Segment 1"

"Flow",	"cBOD5",	"TKN",	"DO",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
.35,	25,	20,	,5,	28

"Hydraulic Information for Segment 1"

"Length",	"Width",	"Depth",	"Velocity"
"(mi)",	"(ft)",	"(ft)",	"(ft/sec)"
.59,	1.999,	1.092,	1.215

"Initial Mix Values for Segment 1"

"Flow",	"DO",	"cBOD",	"nBOD",	"DOSat",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
1.7223,	6.574,	16.685,	14.959,	7.752,	28

"Rate Constants for Segment 1. - (All units Per Day)"

"k1",	"k1@T",	"k2",	"k2@T",	"kn",	"kn@T",	"BD",	"BD@T"
1,	1.444,	10.169,	12.294,	.4,	.74,	0,	0

"Output for Segment 1"
"Segment starts at GRETNA STP"

"Total",	"Segm."			
"Dist.",	"Dist.",	"DO",	"cBOD",	"nBOD"
"(mi)",	"(mi)",	"(mg/l)",	"(mg/l)",	"(mg/l)"
0,	0,	6.574,	16.685,	14.959
.1,	.1,	6.474,	16.564,	14.903
.2,	.2,	6.381,	16.444,	14.848
.3,	.3,	6.294,	16.325,	14.793
.4,	.4,	6.214,	16.207,	14.738
.5,	.5,	6.139,	16.09,	14.683
.59,	.59,	6.077,	15.985,	14.634

"Discharge/Tributary Input Data for Segment 2"

"Flow",	"cBOD5",	"TKN",	"DO",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
0,	2,	0,	,6.978,	28

"Incremental Flow Input Data for Segment 2"

"Flow",	"cBOD5",	"TKN",	"DO",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
.219,	2,	0,	,6.991,	28

"Hydraulic Information for Segment 2"

"Length",	"Width",	"Depth",	"Velocity"
"(mi)",	"(ft)",	"(ft)",	"(ft/sec)"
4,	3.5,	.424,	1.387

"Initial Mix Values for Segment 2"

"Flow",	"DO",	"cBOD",	"nBOD",	"DOSat",	"Temp"
"(mgd)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"(mg/l)",	"deg C"
1.9413,	6.18,	14.746,	12.983,	7.767,	28

"Rate Constants for Segment 2. - (All units Per Day)"

"k1",	"k1@T",	"k2",	"k2@T",	"kn",	"kn@T",	"BD",	"BD@T"
1.5,	2.166,	15,	18.134,	.65,	1.203,	0,	0

"Output for Segment 2"
"Segment starts at UNNAMED TRIBUTARY TO GEORGES CREEK"

"Total" "Dist.",	"Segm." "Dist.",	"DO",	"cBOD",	"nBOD"
"(mi)",	"(mi)",	"(mg/l)",	"(mg/l)",	"(mg/l)"
.59,	0,	6.18,	14.746,	12.983
.69,	.1,	6.101,	14.606,	12.914
.79,	.2,	6.03,	14.467,	12.846
.89,	.3,	5.966,	14.33,	12.778
.99,	.4,	5.909,	14.194,	12.71
1.09,	.5,	5.858,	14.059,	12.643
1.19,	.6,	5.812,	13.925,	12.576
1.29,	.7,	5.771,	13.793,	12.51
1.39,	.8,	5.735,	13.662,	12.444
1.49,	.9,	5.703,	13.532,	12.378
1.59,	1,	5.675,	13.403,	12.313
1.69,	1.1,	5.651,	13.276,	12.248
1.79,	1.2,	5.63,	13.15,	12.183
1.89,	1.3,	5.612,	13.025,	12.119
1.99,	1.4,	5.597,	12.901,	12.055
2.09,	1.5,	5.585,	12.778,	11.991
2.19,	1.6,	5.575,	12.657,	11.928
2.29,	1.7,	5.567,	12.537,	11.865
2.39,	1.8,	5.561,	12.418,	11.802
2.49,	1.9,	5.557,	12.3,	11.74
2.59,	2,	5.555,	12.183,	11.678
2.69,	2.1,	5.554,	12.067,	11.616
2.79,	2.2,	5.555,	11.952,	11.555
2.89,	2.3,	5.557,	11.838,	11.494
2.99,	2.4,	5.56,	11.726,	11.433
3.09,	2.5,	5.564,	11.615,	11.373
3.19,	2.6,	5.569,	11.505,	11.313

modout.txt

3.29,	2.7,	5.575,	11.396,	11.253
3.39,	2.8,	5.582,	11.288,	11.194
3.49,	2.9,	5.59,	11.181,	11.135
3.59,	3,	5.599,	11.075,	11.076
3.69,	3.1,	5.608,	10.97,	11.017
3.79,	3.2,	5.618,	10.866,	10.959
3.89,	3.3,	5.628,	10.763,	10.901
3.99,	3.4,	5.639,	10.661,	10.843
4.09,	3.5,	5.65,	10.56,	10.786
4.19,	3.6,	5.661,	10.46,	10.729
4.29,	3.7,	5.673,	10.361,	10.672
4.39,	3.8,	5.685,	10.263,	10.616
4.49,	3.9,	5.697,	10.166,	10.56
4.59,	4,	5.71,	10.069,	10.504

"END OF FILE"

MEMORANDUM
Department of Environmental Quality
South Central Regional Office

7705 Timberlake Road **Lynchburg, Virginia 24502**

Subject: Planning Service Requests for VPDES Permit Application Processing

To: Amanda McKee, Water Planning Engineer

From: Kirk A. Batsel, Senior Environmental Engineer

Date: November 12, 2003

Copies: Facility Permit Processing File, Planning File

The request for information from the planning section is to be made at the time of sending the reissuance reminder letter to the facility or, for an issuance or modification, at the time of application/modification request receipt.

PERMIT ACTION: Issuance ***Reissuance*** Modification (circle one)

PERMIT TYPE: Major ***Minor*** ***Municipal*** Industrial Storm Water TMP TRE (circle all that apply)

FACILITY NAME: Gretna STP, Pittsylvania Co.

VPDES PERMIT NO.: VA0063843 EXPIRATION DATE: September 20, 2004

PERMIT WRITERS: ATTACH THE FOLLOWING MAPS AND INFORMATION

- Topo map with facility location and outfall locations clearly marked (include any proposed outfalls)
- Site diagram for facilities with multiple outfalls
- Description or map showing effluent flow path if not apparent on topo map
- The outfall numbers, latitude, longitude, receiving stream and topo name in the table below (use an additional sheet if there are more outfalls)
- ✓ Check if a new FLOW FREQUENCY DETERMINATION is being requested. **If checked, provide the previous flow frequency determination memo**
- ____ Check if a new or revised WATER QUALITY MODEL is being requested. **If checked, provide the facility flow and the previous limitations page**
  ____ Check if tiered limits are needed.
- March 23, 2004 Date information needed.

Outfall No.	Latitude	Longitude	Receiving Stream	River Mile	Waterbody ID	Waterbody Name	Topo Name
001	36° 56' 49"	-79° 20' 37"	Georges Cr.	9.92	VAC-L68R	Whitethorn Cr.	Gretna

PLANNING:

- Verify information in table above and provide river mile, waterbody ID and waterbody name
- Updated flow frequency determination

1Q10 1.09 cfs 7Q10 1.37 cfs. 30Q10 1.78 cfs

30Q5 2.13 cfs. HM 4.53 cfs.

High Flow 1Q10 2.33 cfs. High Flow 7Q10 2.68 cfs.

- Water Quality Management Plan Information:

a. Is the facility mentioned in a WQ Management Plan?

X Yes

____ No, but will be included when the plan is updated.

b. Are limits contained in the WQ Management Plan?

X Yes (If so, attach a copy of the plan limits)

____ No

- 303(d) Listed Segment(s)

a. Does the facility discharge to a 303(d) listed segment? ____ Yes X No

b. If yes, for what is the segment listed? _____

c. TMDL due date _____

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
Town of Gretna STP – VA#0063843

TO: Kirk Batsel

FROM: Amanda McKee

VIA: Kyle Winter

DATE: November 14, 2003

COPIES: File

This memo supersedes the February 26, 1999 memo from Paul Herman to Karen Stevens concerning the subject VPDES permit.

The Town of Gretna discharges to George's Creek near Gretna, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The VDEQ has operated a continuous record gage on George's Creek near Gretna, VA (#02076500) since 1949. The gage is located at the Route 40 bridge downstream of the discharge point. The flow frequencies for the gage and discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

George's Creek near Gretna, VA (#02076500): 4/8/04 Revised:

Drainage Area: 9.24 mi^2

1Q10 = 1.6 cfs	High Flow 1Q10 = 3.4 cfs
7Q10 = 2.0 cfs	High Flow 7Q10 = 3.9 cfs
30Q5 = 3.1 cfs	Harmonic Mean = 6.6 cfs
30Q10 = 2.6 cfs	

HF30Q10 = 5.1 cfs.

George's Creek at discharge point:

Drainage Area: 6.34 mi^2

1Q10 = 1.09 cfs	High Flow 1Q10 = 2.33 cfs
7Q10 = 1.37 cfs	High Flow 7Q10 = 2.68 cfs
30Q5 = 2.13 cfs	Harmonic Mean = 4.53 cfs
30Q10 = 1.78 cfs	

HF30Q10 = 3.5 cfs

The high flow months are January through May. If there are any questions concerning this analysis, please let me know.

303(e) Wasteload Allocation BODs lbs/day

WQMA VII	South Hill - Lacrosse - Broadnax	South Hill, Lacrosse and Broadnax	Flat Cr.	WQ	N/A[1]
WQMA VII	Virgilina	Virgilina	X-Trib. To Wolfpit Run	EL	13.00
WQMA IX	Chatham-Gretna	Chatham-Gretna	Cherrystone Cr. Georges Cr.	EL EL	125.22 100.00
WQMA X	Dan River	Danville and US Gypsum	Dan R.	WQ	4407.00
WQMA X	Dan River, Inc.	WILL DISCHARGE PROCESS WATER TO THE CITY OF DANVILLE STP			
WQMA XII	Smith R.	Henry County PSA-Upper Smith R. STP	Smith R.	WQ	567.00
		Collinsville STP Fieldcrest Mills	CONNECTED TO UPPER SMITH R. STP CONNECTED TO UPPER SMITH R. STP		
		E.I. duPont	Smith R.	WQ	503.00
		Martinsville STP	Smith R.	WQ	1500.00
		Henry County PSA-Lower Smith R. STP	Smith R.	WQ	567.00
WQMA XIV	Stuart-Patrick Springs	Stuart STP	S. Mayo R.	EL	141.90
		United Elastic Patrick Springs	S. Mayo R.	EL	8.38
WQMA XIV	NONE	United Elastic Woolwine	Smith R.	EL	192.00

NOTES:

[1]See Table B3 of this section.

TABLE B3 - WASTELOAD ALLOCATIONS FOR DISCHARGERS WITH TIERED PERMITS ROANOKE RIVER BASIN WATER QUALITY MANAGEMENT PLAN.

Water Quality Management Area (WQMA)	Study Area Name	Discharger	Months	Effluent Flow (mgd)	D.O. (mg/l)	$CBOD_5$ (lbs/day)	BOD_5 (mg/l)	Ammonia (mg/l)	Total Kjeldahl Nitrogen (mg/l)
WQMA VI	Keysville	Keysville	Dec.-Apr. May-Nov.	0.500 0.500	5.0 5.0	104.32 70.94	25.0[1] 17.0[1]	1.4	4.0
WQMA VII	South Hill-Lacrosse-Broadnax	South Hill	Jan.-Feb.-March	1.000	6.5	250.00	30.0	20.0	
			Apr.-May	1.000	6.5	83.0	10.0	1.0	
			June-Sept	1.000	6.5	75.00	9.0	1.0	
			Oct.	1.000	6.5	83.00	10.0	1.0	
			Nov.	1.000	6.5	142.00	17.0	5.0	
			Dec.	1.000	6.5	250.00	30.0	20.0	
WQMA VII	Clarksville-Chase City-Boydton	Boydton	May-Nov.	0.360	5.0	39.1	13.0[1]		3.0
			Dec.-Apr.	0.360	5.0	75.1	25.0[1]		
WQMA VII	Clarksville-Chase City-Boydton	Chase City	May-Nov.	0.600	6.0	65.04	13.0[1]	1.8	4.2
			Dec.-Apr.	0.600	7.0	125.22	25.0[1]	3.4	8.8

NOTES:

ATTACHMENT B

GEORGES CREEK

WATER QUALITY SURVEY

AND

WASTE LOAD ALLOCATION ANALYSIS

FOR THE

TOWN OF GRETNA, VIRGINIA

Prepared By

The State Water Control Board

April 20, 1978

Figure 3 and 4 show the model predicted vs. measured BOD and D.O. respectively for September 20, 1977. Figures 5 and 6 show the model predicted vs. measured BOD and D.O. respectively for September 21, 1977. The September 20 results are quite good with both BOD and D.O. model predictions well within a reasonable range of measured data. The September 21, 1977, results are also considered exceptable, however, the predicted vs. measured D.O. at Station 5 is not well matched. The high D.O. predicted at Station 5 is primarily due to the high background D.O. comprising a majority of the flow at Station 5. An error appears likely at either Station 4 or Station 5 in the sampling data.

Overall, the limited calibration and verification of the model is considered acceptable.

Gretna STP Waste Load Allocations

The waste load allocation for the proposed Gretna STP at Station 3a is determined by application of the D.O. model at the most severe stream conditions. The most severe stream conditions at which Water Quality Standards apply is the 7 day-10 year low flow condition in conjunction with warm summer weather.

The imputs for this model run have been previously presented with the exceptions of background BOD and background D.O. saturation. These values were taken as the average of the data at Stations 1 and 4 of September 20 and September 21. A summary of all model imput for waste load allocation is given in Table 4.

The results of the model run indicate that the effluent limitations given below for the proposed Gretna STP would maitain stream D.O. at or above minimum standards:

BOD_5 - 30 mg/l
D.O. - 5 mg/l

Figures 7 and 8 show the model predicted D.O. and BOD profile, respectively for the discharge at the indicated allocation.

TABLE 4

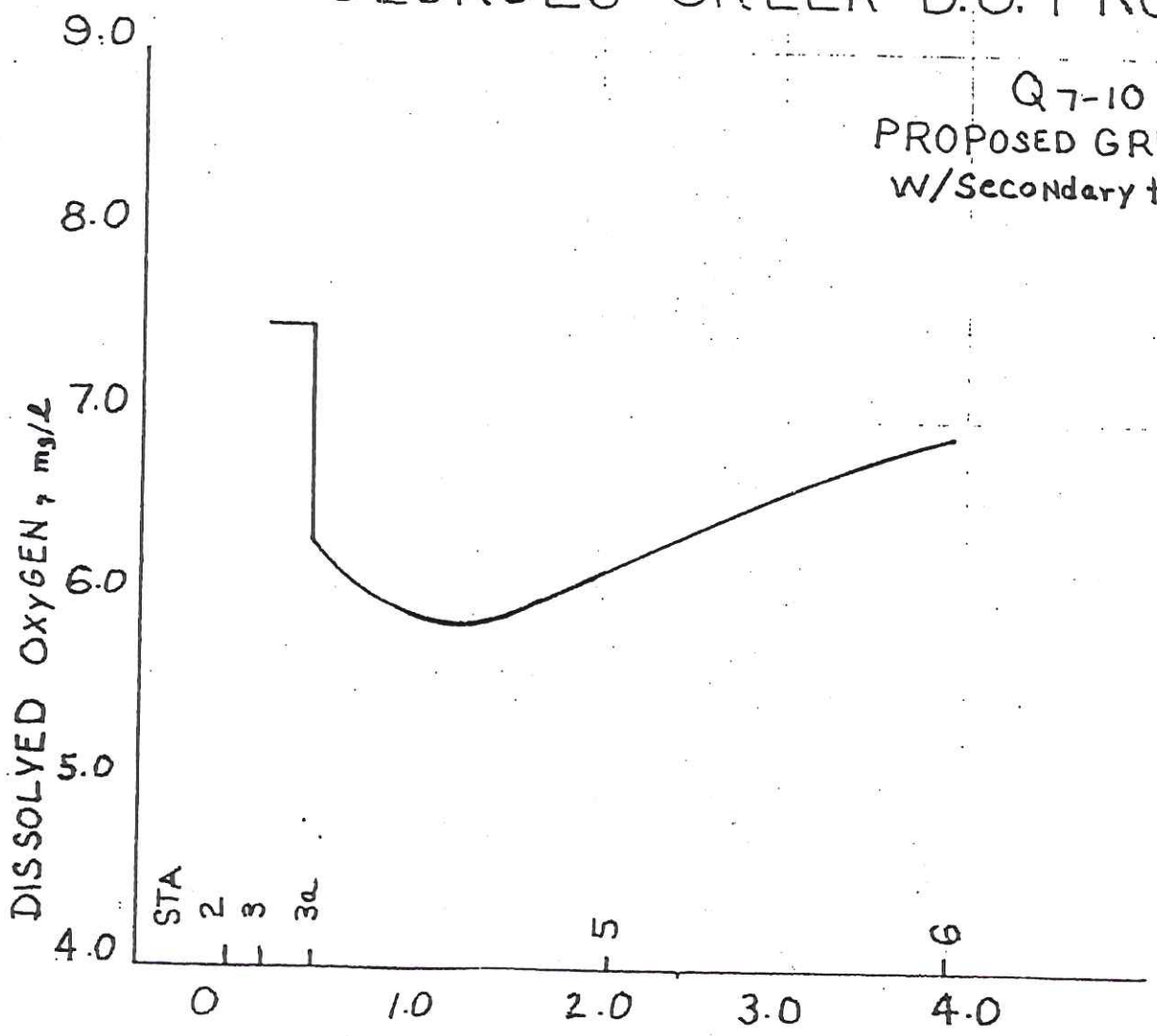
Model Imput for Gretna Waste Load Allocation

STP Effluent Flow	0.4 MGD
Stream Q_{7-10}	
3a before STP	.63 cfs
3a after STP	1.25 cfs
5	1.53 cfs
6	1.9 cfs
Background CBOD Ulitmate	2.5 mg/l
Background D.O. Saturation	92%
Stream Temperature	27°C
Average Stream Velocity	0.23 fps
k_1 (27°C)	0.25 $days^{-1}$
k_2 (27°C)	2.24 $days^{-1}$
Minimum Stream D.O.	5.0 mg/l

FIGURE 7

GEORGES CREEK D.O. PROFILE

Q 7-10 CONDITIONS
PROPOSED GRETNA 0.4 MGD STP
W/ Secondary treatment & post aeration



CONCLUSIONS

1. Hydraulic data collected during the Georges Creek Survey supplemented with Division of Water Resources gage information provided satisfactory information for use in a steady-state D.O. model.

2. Stream Water Quality data collected during the Georges Creek Survey were generally satisfactory for use in a steady-state D.O. model.

3. A D.O. model for Georges Creek downstream of the Gretna STP was developed and received satisfactory, although limited, calibration and verification.

4. Waste load allocation for the proposed Gretna STP resulting from the model indicates that secondary treatment with post aeration will maintain water quality standards.

ATTACHMENT 10

303(d) LISTED SEGMENTS

Bacteria TMDL Development for the Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek Watersheds

Submitted by

Virginia Department of Environmental Quality

Prepared by

GEORGE MASON UNIVERSITY

and

THE Louis Berger Group, INC.

2445 M Street, NW Washington, DC 20037

September 2007

model. The existing fecal coliform loading was calculated based on current watershed conditions. Since Virginia has recently changed its bacteria standard from fecal coliform to *E. coli* the modeled fecal coliform concentrations were changed to *E. coli* concentrations using a translator.

TMDL Calculations

The TMDL represents the maximum amount of a pollutant that the stream can receive without exceeding the water quality standard. The load allocation for the selected scenarios was calculated using the following equation:

$$TMDL = \sum WLA + \sum LA + MOS$$

Where,

WLA = wasteload allocation (point source contributions);

LA = load allocation (non-point source allocation); and

MOS = margin of safety.

The margin of safety (MOS) is a required component of the TMDL to account for any lack of knowledge concerning the relationship between effluent limitations and water quality. The MOS was implicitly incorporated in this TMDL. Implicitly incorporating the MOS required that allocation scenarios be designed to meet a 30-day geometric mean *E. coli* standard of 126 cfu/100 mL and the instantaneous *E. coli* standard of 235 cfu/100 mL with 0% exceedance.

Typically, there are several potential allocation strategies that would achieve the TMDL endpoint and water quality standards. A number of load allocation scenarios were developed to determine the final TMDL load allocation scenario.

For the hydrologic period from January 1996 to December 2003, fecal coliform loading and instream fecal coliform concentrations were estimated for the various scenarios using the developed HSPF model of for Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek. After using the instream translator, the TMDL allocation plan was developed to meet geometric mean

and instantaneous *E. coli* standards. Based on the load-allocation scenario analyses, the TMDL allocation plans that will meet the 30-day *E. coli* geometric mean water quality standard of 126 cfu/100 mL and the instantaneous *E. coli* water quality standard of 235 cfu/100 mL are presented in **Table E-1**.

Table E-1: Allocation Plan Loads for E. coli (% reduction) for the Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek

Watershed	Human Sources (failed septic systems and straight pipes)	Livestock (Direct Instream Loading)	Agricultural and urban non point sources	Wildlife (Direct Instream Loading)
Banister River (VAC-L65R-01)	100.0%	100.0%	81.0%	35.0%
Banister River (VAC-L67R-01)	100.0%	100.0%	92.0%	35.0%
Bearskin Creek (VAC-L65R-02)	100.0%	100.0%	83.0%	40.0%
Cherrystone Creek (VAC-L66R-01)	100.0%	100.0%	94.0%	25.0%
Polecat Creek (VAC-L71R-05)	100.0%	100.0%	74.0%	40.0%
Stinking River (VAC-L69R-01)	100.0%	100.0%	83.0%	35.0%
Sandy Creek (VAC-L70R-01)	100.0%	100.0%	85.0%	40.0%
Whitehorn Creek (VAC-L68R-01)	100.0%	100.0%	94.0%	30.0%

The summaries of the bacteria TMDL allocation plan loads for Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek are presented in **Table E-2**.

Table E-2: Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek TMDL Allocation Plan Loads for E. coli (cfu/year)

Watershed	WLA (Point Sources)	LA (Nonpoint sources)	MOS (Margin of safety)	TMDL
Banister River (VAC-L65R-01)	1.52E+11	1.52E+13	IMPLICT	1.54E+13
Banister River (VAC-L67R-01)	2.78E+10	1.06E+14	IMPLICT	1.06E+14
Bearskin Creek (VAC-L65R-02)	9.18E+10	9.18E+12	IMPLICT	9.27E+12
Cherrystone Creek (VAC-L66R-01)	5.86E+12	1.85E+13	IMPLICT	2.43E+13
Polecat Creek (VAC-L71R-05)	8.40E+10	8.40E+12	IMPLICT	8.48E+12
Stinking River (VAC-L69R-01)	1.50E+11	1.50E+13	IMPLICT	1.52E+13
Sandy Creek (VAC-L70R-01)	3.94E+11	3.94E+13	IMPLICT	3.98E+13
Whitehorn Creek (VAC-L68R-01)	3.06E+12	2.52E+13	IMPLICT	2.82E+13

3.5 Fecal Coliform Source Assessment

This section focuses on characterizing the sources that potentially contribute to the fecal coliform loading in the Banister River watershed. These sources include permitted facilities, sanitary sewer systems and septic systems, livestock, wildlife, pets, and land application of manure and biosolids. Chapter 4 includes a detailed presentation of how these sources are incorporated and represented in the model.

3.5.1 Permitted Facilities

Data obtained from the DEQ's South Central Regional Office Regional Office indicate that there are 8 individually permitted facilities currently active or under application within in the Banister River Watershed. The permit number, design flow, and status for each permit are presented in **Table 3-13** and shown in **Figure 3-12**.

The available flow data for the permitted facilities was retrieved and analyzed. Bacteria concentrations were not recorded for any of the permitted facilities within the watershed. Average flows for the permitted facilities were used in the HSPF model set-up and calibration. The waste treatment plants use chlorine for disinfection, and many measure total contact chlorine as an indication of fecal coliform levels. The available data indicate that adequate disinfection was achieved at the plants, and that these facilities were not a large source of fecal coliform loading. DMR data is summarized in Appendix A.

Table 3-13: Individual Permitted Facilities within the Banister River Watershed

Permit No	Facility Name	Receiving Stream	Status	Size	Category	Design Flow (GPD)	Permitted to Discharge Bacteria? (Y/N)
VA0006513	Gretna Town - Water Treatment Plant	Georges Creek	Active	Minor	Industrial	27,000	N
VA0020524	Chatham Town - Sewage Treatment Plant	Cherrystone Creek	Active	Minor	Municipal	685,000	Y
VA0022721	Halifax County Schools Meadville Elem	Sandy Creek/U.T.	Active	Minor	Municipal	5,100	N
VA0022730	Halifax County Schools Sydnor Jennings Elem	Bradley Creek/U.T.	Active	Minor	Municipal	5,100	N
VA0027707	Pittsylvania Co - Mount Airy Elementary School	Blacks Creek, UT	Active	Minor	Municipal	5,000	N
VA0027715	Pittsylvania Co - Union Hall Elem School	Wet Sleeve Creek, UT	Active	Minor	Municipal	6,000	N
VA0063843	Gretna Town - Sewage Treatment Plant	Georges Creek	Active	Minor	Municipal	350,000	Y
VA0001309	Cook Composites and	Banister	Active	Minor	Industrial	50,000	N

5.13 Whitehorn Creek (Segment VAC-L68R-01)

5.13.1 Whitehorn Creek Waste Load Allocation

There is one municipal permitted facility discharging bacteria to Whitehorn Creek (Segment VAC-L68R-01). For this TMDL, following DEQ guidance the waste load allocation for such facilities is to assume the discharge at five-times the design flow limits and bacteria concentrations at the existing *E. coli* standard of 126 cfu/100mL. **Table 5-18** shows the existing and allocated loads from general domestic dischargers in Whitehorn Creek (Segment VAC-L68R-01).

Table 5-18: Whitehorn Creek (Segment VAC-L68R-01) Waste load Allocation for *E. coli*

Point Source	Facility Type	Existing Load (cfu/yr)	Allocated Load (cfu/yr)	Percent Reduction
VA0063843	Municipal	6.11E+11	3.06E+12	-
Total		**6.11E+11**	**3.06E+12**	-

5.13.2 Whitehorn Creek Allocation Plan and TMDL Summary

The requirements to meet the calendar month *E. coli* geometric mean water quality standard of 126 cfu/100mL and the instantaneous water quality standard of 235 cfu/100mL for Whitehorn Creek (Segment VAC-L68R-01) are (**Table 5-19**):

- 100 % reduction of the human sources (failed septic systems and straight pipes).
- 100 % reduction of the direct instream loading from livestock.
- 94 % reduction of bacteria loading from agricultural and urban nonpoint sources.
- 30% reduction of bacteria loading from direct deposition from wildlife
- No reductions from the forested land (wildlife indirect loads)

The coefficient of variation of the simulated daily loads for Whitehorn Creek (Segment VAC-L68R-01) is 1.65.

ATTACHMENT 11

TABLE A AND TABLE B - CHANGE SHEETS

TABLE A

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER	MONITORING CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001 @ 0.23 MGD	T. Recoverable Copper	None to 1/Month after limit effective date	None to 17 ug/l (monthly average and weekly average)	Data previously generated were re-evaluated based on the change in the Virginia Copper WQS. This re-evaluation indicated the need for the limitation.	KAB 7/24/09
001 @ 0.35 MGD	T. Recoverable Copper		18 ug/l (monthly average and weekly average) to 14 ug/l (monthly average and weekly average)	Data previously generated were re-evaluated based on the change in the Virginia Copper WQS. This re-evaluation indicated the need for the change in the limitation.	KAB 7/24/09
001	*E. coli*	None to 1/Week	None to 126 (N/CML-geometric mean)	This limitation was necessary to add based on the bacteria impairment of the receiving stream watershed TMDL. This limitation conforms with the EPA approved TMDL.	KAB 7/24/09

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
None	Added a Schedule of Compliance for T. Recoverable Copper as this was a new limitation for the existing discharge. This schedule will allow time for the facility to assess options available to comply with the subject limitation.	KAB 7/24/09
No special condition	Added a VPDES permit reissuance application due date condition to better identify the deadline to submit a VPDES reissuance application.	KAB 7/24/09

ATTACHMENT 12

EPA/VIRGINIA DRAFT PERMIT SUBMISSION CHECKLIST

Part I. Virginia Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Town of Gretna STP
NPDES Permit Number:	VA0063843
Permit Writer Name:	Kirk A. Batsel
Date:	July 24, 2009

Major [ ] **Minor** [X] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
8.a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
8.b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
8.c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?	X		
17. Does the permit include appropriate Pretreatment Program requirements?	X		
18. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
19. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
20. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
21. Has previous permit, application, and fact sheet been examined?	X		

Part II NPDES Draft Permit Checklist
Region III NPDES Permit Quality Checklist – for POTWs
(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet **or** permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a Comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the record discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
2.a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long-term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the Secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average?		X	
5.a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering state narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
4.a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
4.b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
4.c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
4.d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
4.e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
1.a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate his waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

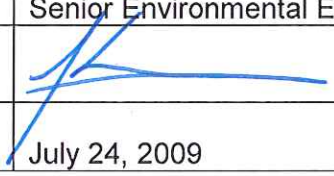
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		

II.F. Special Conditions – cont.	Yes	No	N/A
2. Does the permit include appropriate storm water program requirements?			X
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?	X		
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
5.a. Does the permit require implementation of the "Nine Minimum Controls"?			X
5.b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
5.c. Does the permit require monitoring and reporting for CSO events?			X
6. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41 • Duty to comply • Duty to reapply • Need to halt or reduce activity not a defense • Duty to mitigate • Proper O & M • Permit Actions • Property rights • Duty to provide information • Inspections and entry • Monitoring and reporting • Signatory requirement • Reporting requirements Planned change Anticipated non-compliance Transfers Monitoring Reports Compliance schedules 24-hour reporting Other non-compliance • Bypass • Upset			
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Kirk A. Batsel
Title	Senior Environmental Engineer
Signature	
Date	July 24, 2009

ATTACHMENT 13

CHRONOLOGY SHEET

Chronology

Friday, July 24, 2009

Facility Name: Gretna Town - Sewage Treatment Plant *VA0063843*

Date	*Event*	*Comment*
9/22/2008	First Application Reminder Phone Call:	spoke w/ David Lilly, Town Manager about reissuance
9/22/2008	Reissuance letter mailed:	sent reissuance reminder to town via email
10/20/2008	Second Application Reminder Phone Call:	spoke w/ David Lilly, Town Manager about reissuance
3/23/2009	Application Administratively complete:	
3/23/2009	Application received at RO 1st time:	
3/24/2009	Reissuance application due:	
3/30/2009	App complete letter sent to permittee:	via email to David Lilly, Town Manager
3/30/2009	App sent to State Agencies (list in comment field):	to VDH
4/6/2009	Application totally / technically complete:	
4/24/2009	Site visit:	
6/10/2009	Site inspection report:	
7/24/2009	Draft permit developed:	
9/20/2009	Old expiration date:	
9/20/2009	Permit expires:	